

COAL AGE

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"Nor Shall Private Property Be Taken for Public Use, Without Just Compensation"

HOLDING that the highest market price at the time of commandeering is the only proper measure of just compensation, Federal Judge Bodine, sitting in Trenton, N. J., last week directed the jury in the suit of the New River Collieries vs. the U. S. Government to award the coal company a judgment in accordance with this principle. The navy had commandeered some 60,000 tons of coal shipped to Tidewater by the coal company and had offered a price around \$3.60 per ton or the alternative guaranteed by the Lever Act of suing the government in the Federal courts if this price was not satisfactory. The coal company asked an average price of about \$8.30 and was awarded a trifle under seven dollars.

The actual figures are of small moment compared with the principle laid down by the judge. Argument was not entertained or heard on the question of what constitutes "just compensation" guaranteed by the constitution to a citizen or citizen corporation for property commandeered by the government; the judge ruled out the testimony of witnesses for the government who sought to show what it cost to produce the coal that had been taken and stated that the only question involved was one of fact—the market price of the coal on the particular day the navy commandeered it. In the opinion of this judge the highest market price that might have been obtained for the coal represented just compensation.

This decision, which of course is subject to appeal for review before the highest court of the land, is of far-reaching import to the coal industry, not only affecting other coal taken by the navy but possibly influencing action on settlements for coal diverted or confiscated by the railroads and others in the future.

Labor's Opposition to Deflation

LIKE the strike in October of last year, the stoppage of work in the coal mines of Great Britain on the first of this month was discounted in advance and preparations appear to have been made in the way of accumulating reserves of coal. The British miners were out three weeks last year at a time of greater demand for coal than now obtains, without any serious shortages developing and without material effect on prices here or abroad. The call for coal in all parts of the world has been so low for the past few months that nothing but a protracted shutdown of the mines in Great Britain can have the effect of giving more than a slight impetus to the market here.

France, one country that six months ago was buying coal at high prices and leaning heavily on the British mines, has large stocks and little demand. According to recent advices the supply in that country is not less than three times what it was a year ago and coal from Germany is now coming into France at the rate of more

than 2,000,000 tons per month, while the French mines are producing at an increasing rate. Imports of English coal into France in February were but 369,000 tons, compared with 1,232,000 tons during the corresponding month a year ago and about 1,000,000 tons in February, 1913. The falling off this year was due not to inability to get the coal but to absence of need for it, and the mines in Great Britain were idle as a result of this lack of demand. From 2,601,046 tons in February of last year total exports fell to 1,729,148 tons in February, 1921. In the same month of 1913 exports were 5,569,917 tons.

The tremendous drop in world demand for coal is really what precipitated the trouble in Great Britain. In the year 1920 nearly 20 per cent of the total commercial coal produced in that country was sold for export or used as bunkers for ships engaged in foreign trade, and the profits derived from this business were sufficient to maintain the high wages guaranteed the miners by the British government. With the decline in the export market, the operators of the mines were faced with the alternative of closing down or reducing costs in order to meet competition, as from this country. To reduce costs, labor must come down, and it is that reduction in wages that is now being resisted.

Ignoring an Opportunity

TO THOSE who are complacently watching the coal-consuming public fritter away the precious days of car surplus and cheap coal, secure in their belief that if not now, then later, coal must be bought, and if not now at reasonable figures then later at high prices, expectant if not hopeful that the latter part of the year will bring a condition of famine prices, it may not be amiss to point out that a repetition of 1920 in coal prices is certain to bring with it a recurrence of public protest and certain Federal legislation regulating the industry and fixing prices. There is no mistaking the fact that coal has few friends at court and fewer in Congress who will dare to come out in the open in its defense. There is no public sentiment favoring the coal man; the big question is whether between now and when the next storm breaks the public can be won back to an attitude that will be at least sympathetic.

It is idle to think that another crisis can be weathered after the fashion of the last one. And it is but too true that a quickening of demand for coal next summer or autumn will produce a car shortage and the kind of a market that by common consent, so it seems, has come to mean panic prices. It was good fortune and a combination of propitious circumstances that forestalled a Fuel Administrator last summer and it was the count of the referee that put the Calder bill down and out with the expiring administration on March 4. No change of heart with the constituents of the men in Congress stopped legislation on coal. Nothing has been done to give the man on the street cause to pause in

his condemnation of the coal man. To hold the support of the organizations of business men who registered opposition to the Calder bill the coal industry must do more than simply hold before them the "bogey man" of general restrictive legislation on essential industries.

It is understood that the program—the administration program, if you will—in the next session of Congress will not have for its foundation the theory that coal is "charged with public use." And if that is left out, other business will have cause to abandon its fear and withdraw its opposition to coal legislation. Senator Frelinghuysen has indicated his intention of re-introducing his bills with some modifications. These bills are not predicated on the theory that coal is a public utility. It is a fair assumption that Senator Calder's proposals will receive scant attention when the Frelinghuysen bills are pushed.

Coal legislation may not be actively considered this spring or during the early months of the forthcoming special session. Much will depend on the attitude of the coal industry—progress in the press of other legislation will be hindered by its opposition. But look out for the consequences if the market goes up precipitately. In that event no power in Congress could or would stop Federal fixing of prices.

Pulverizing Stations

OPERATORS continue, and have continued for more than a century, to offer the same class of products to the general public—just coal. Some have mixed it with a little service in the way of information and advice. But it is still coal, just coal, that they are selling.

Your manufacturer always is offering something new, something better suited to the needs of the mine or the mill. Every year he has something that does the same work in a better way. But the coal man knows nothing but coal and beehive coke. Sometimes he cleans the coal and sometimes he sizes it, and sometimes again he doesn't.

"A cycle of Cathay" and he will still be selling his product in the old way—not as byproduct coke, not as carbocoal or coalite, not as powdered coal, nor as electricity or gas but just as ever—as coal. What it is as it leaves the mine so it is as it reaches the consumer; a little rock or bone may be removed, the large sizes may be segregated and, with anthracite, the excessively coarse material may be reduced to medium sizes, but still the product is not materially changed. The sole exception is when the coal is briquetted, and there are limits to the availability of briquetting.

Perhaps then it is impossible to induce him to believe that he ought to produce at least one new variation—pulverized coal. It takes heat to drive off the moisture before the coal is crushed. Why not apply this heat by burning coal that has not been transported to market and with a refuse fuel that is not salable anywhere? The moisture driven off makes the coal lighter, saving transportation charges. Why not save freight by driving off the moisture at the mine instead of hauling it to the market and then driving it off.

The manufacture of pulverized coal involves the use of enough equipment to make any but the largest of buyers hesitate, for the purchase of the pulverizing plant is not the only cost. When purchased it has to be operated, and a small plant is costly per unit of product.

It is for these reasons that it seems natural to put the drying and crushing plant at the mines instead of at the consuming plant. It is true that the mill might

be built near the market, and distribution might be made by specially constructed motor trucks, but the coal might just as well be handled without that intermediate station.

Besides, there are objections to the manufacture of an explodable product close to a densely populated region. Furthermore, where the purchasers buy in car-load lots the wages of superintendence may be saved by dispensing with the intermediate station. Where coal is delivered to consumers who take less than car-load lots some sort of depot will be needed at which the coal in the railroad car can be transferred to the motor truck. Should the coal be handled by a retailer the coal operator would avoid this superintendence cost, which then would become merely a part of the regular retailing expense and a little less than that involved in the handling of sized coal.

With the finances of the railroads as they are it will be necessary for the coal company to purchase the special cars that must be used for the transportation of the powdered coal. It may be necessary also in some cases to advance some of the cost of installation to those who throw out their grates and overhead storage bins and equip themselves with tanks and powdered-coal burning equipment. But there are big economies in the use of powdered fuel, and the coal man should try to obtain some of the profit to be derived from it by creating for this product a market demand.

The man who has coal to sell must do his part to convert a potential into an actual market. He must be prepared to fill the need, or the pulverization of coal will come slowly and bring profits to everyone but the coal operator, who should be the man most interested and advantaged. Already the pulverized-coal business appears to be in the hands of alien interests in all but one case and in not a single instance is the pulverizing done at the mine, which is the logical place for such a plant.

Short Way to Professional Prominence

MANY a young man—or older man, for that matter—is seeking an opportunity to do research work, but the need to seek a living and the cost of apparatus prevent him from realizing his dream. If only a chance were given such a man which would enable him to live he would willingly give a year or two of his life to establish himself as the leading authority on some subject. Incidentally his work would not only help industry but should net him in the end considerable gains.

With the aim of helping industry the co-operative department of mining engineering of the Carnegie Institute of Technology offers two fellowships in mining research and two in teaching and research in co-operation with the Bureau of Mines. The fellowships do not supply any more than the meagerest of living—\$750 a year—but compared with a college course, where all is outgo and there is no income, the offer is quite inviting.

Moreover it establishes the individuality of the worker and in future it may be said not that he was graduated from such and such a university but that he has added luster to the institute where he was honored by a fellowship. Two years more of instruction might not better his standing a jot but two years of investigation might place him in the honored roll of the industry's experts. It is certainly time not wasted. Opportunities like these have been open, and still may be open, in the University of Illinois.

Nanty Glo Has First Coal-Mine Substation Equipped to Run Without Attendant

Automatic Station Saves Skilled Operative and Does Work More Efficiently—If Overload Becomes Too Severe Plant Shuts Down—If Bearing Gets Hot, Load Is Shifted to Another Machine

BY GRAHAM BRIGHT*
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PROMINENT among recent electrical developments at mines must be placed the installation, by the Lincoln Coal Co. of Nanty Glo, Pa., of an automatic substation. This substation enjoys the distinction of being the first to be installed in American mines.

It is true that many mine substations heretofore installed would operate for a few hours without any attention whatever, but in most cases it was necessary whenever the station was working to keep a man in attendance in order to take care of the many emergencies that might arise.

In most mines the workings are extending, and additional substation units must be installed. Furthermore for economical operation it is necessary to have a steady voltage. Hence substation work is demanding more and better men, and the automatic station seems to be the most promising way in which to avoid this expense.

The Lincoln Coal Co.'s drift mine at Nanty Glo is located in the mountain section of Pennsylvania near Johnstown. The maximum main haul is somewhat more than two miles long. Power is produced by 250-volt direct-current generators belted to steam engines, these units being located near the drift mouth. Throughout the entire length of the main haul the grade is against the loaded trip, so that even with feeder wire of fair

capacity the voltage at the working places is low whenever a trip is being hauled out.

The Penn Central Power Co. has a transmission line crossing the property, and it was decided accordingly to install a substation in the mine near the working places. Charles Stuart, of Stuart, James & Cook, acting as consulting engineer for the coal company, decided to install a Westinghouse automatic substation, his purpose being to provide the needed relief on the line at a minimum operating cost.

The substation is located two miles from the drift mouth in a dry, well-ventilated and well-lighted underground chamber measuring about 10 x 30 ft. The walls are built of heavy masonry, the ceiling being formed of concrete reinforced and supported by steel beams. The inside walls are plastered with cement. The high potential 2,200-volt cable by which the substation is fed comes down from the surface through a borehole just outside this chamber. The entire substation is built and the equipment mounted in a thoroughly substantial manner to insure long life and low maintenance.

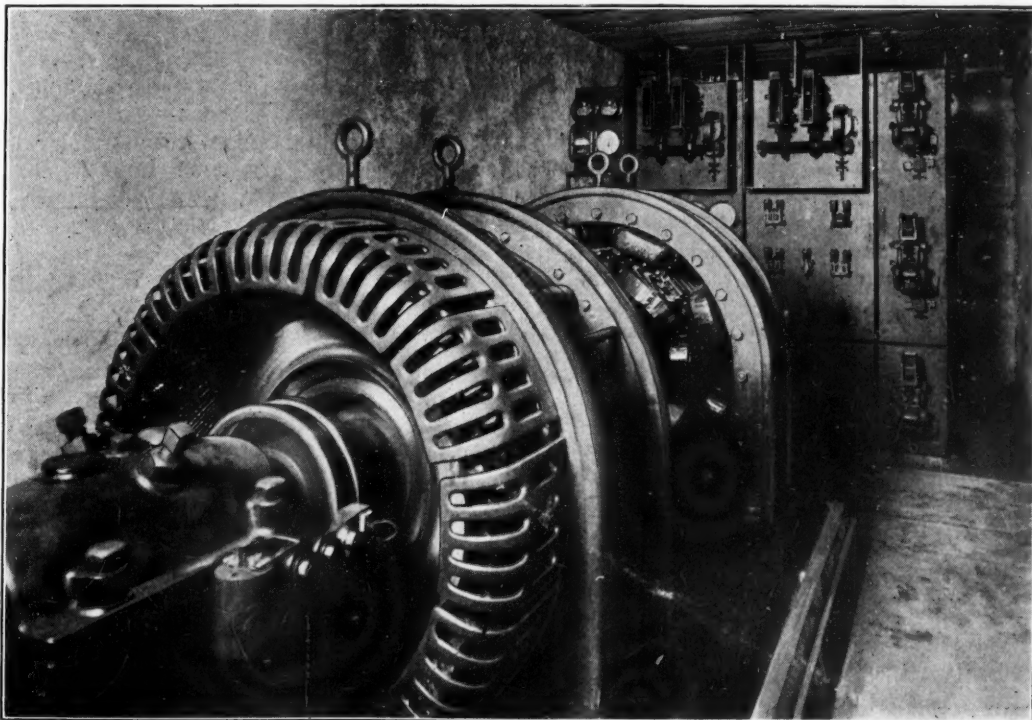
Fig. 2 illustrates the automatic-control equipment. The main oil switch, resistance grids and some of the relays are located behind the switchboard panel. The entire equipment is highly compact but is so installed that every piece of apparatus is readily accessible for inspection or repair.

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FIG. 1.

Nanty Glo's Automatic Substation

In the foreground is the 200-kw. synchronous motor-generator set and in the rear the four-panel switchboard. The substation is started and stopped by a small control switch operated by the first man to enter the mine in the morning and the last to leave in the afternoon.



The three large switches to the right are the contactors that cut in resistance when the load becomes too great. The contactor at the bottom in the center is the main direct-current switch and is controlled by an alternating-current magnet. The large high-voltage contactors at the top are for controlling the motor-generator set, the one on the right being the starting and the other the running switch.

The main oil circuit breaker, auto transformer and resistance are located in the rear of the panel. In the center are placed the various relays and meters. To the left is located an incoming alternating-current panel with graphic, indicating and integrating meters as well as overload relays. Fig. 1 is a view within the substation room showing the motor-generator set with the automatic equipment in the rear.

Automatic substation equipment is designed to operate with either rotary converters or motor-generator sets. About the only difference between the two is that the rotary, if of the commutating-pole type, requires a brush-lifting device, a polarized relay being needed to bring the rotary into step when the direct-current voltage is reversed.

HAS IMPROVED VOLTAGE AT POINTS IN MINE

The converting unit at the Lincoln Coal Co. installation is a 200-kw. synchronous motor-generator set. The entire substation equipment has operated with perfect success ever since it was installed. Before this substation was placed in service the operating conditions were markedly unsatisfactory. It required forty-five minutes to bring out a loaded trip of thirty cars. During this time the voltage was low for gathering locomotives and cutting machines. Since the substation was placed in operation a round trip consisting of the same number of cars is made in eighteen minutes. The voltage desired is obtained at all times in the various parts of the mine, and as a result all operations have been speeded up. The output has been increased 200 tons per day, which represents a fairly large percentage for a mine whose yearly production is 150,000 tons.

The substation at present is started and stopped by a small control switch operated by the first man to enter the mine in the morning and the last one to come out in the afternoon. The substation can easily be made entirely automatic by moving the double-throw control switch to the other position from that normally occupied or it can be started and stopped from a push-button station in the power plant.

Under automatic operation the substation will begin functioning when the trolley voltage goes below a predetermined value for a period exceeding five seconds. The set is started up and placed on the line in about twenty-five seconds. It stays on the line until the direct current has been reduced below a certain predetermined value for a period of time ranging from three to thirty minutes. Heavy overloads are taken care of by automatically inserting resistance in the direct-current feeder circuit. This lowers the substation voltage and shifts some of the load to the steam plant. As soon as the overload is reduced the resistance grids are cut out. If, however, the overload persists long enough to heat up the grids to a dangerous temperature, a thermostat will shut down the substation.

As soon as the grids have cooled down the station will start up again if voltage conditions require it. If necessary, this scheme can be changed and an automatic reclosing breaker substituted. This may prove

more satisfactory in mines where short circuits frequently occur. A continued overload on the generator or rotary will cause the substation to shut down until the set can cool off, after which it will automatically start again if required.

The bearings of the motor-generator set or rotary are equipped with thermostat relays which will cause the machine to be shut down if a hot bearing develops. It will not start up again until the thermostat is reset by hand, thus insuring attention being given the bearing before the unit is again placed in operation. The automatic control features can be elaborated or extended to any degree desired, but only simple and necessary features are recommended for mine service.

The following considerations have made the new substation equipment popular and a practical success: (1) The equipment duplicates in every way the manually-operated substation apparatus. (2) Each switching operation is a direct function of the electrical condition of the converting apparatus at that particular moment. (3) Each succeeding switching operation is dependent upon the proper functioning of the preceding operation. (4) At no time is any switching operation dependent upon any mechanical time element or any sequence of mechanical operations. (5) None of the time elements used with various relays is of the oil dash-pot type; each is especially designed to be unaffected by wide variations in temperature. Ordinarily a substation without an operator would not be heated, and at low temperature oil dash-pots may become inoperative. (6) The entire equipment embraces an assembly of proven apparatus. The majority of the magnet switches and relays here installed have demonstrated their utility in steel-mill control work. In consequence the ruggedness and sufficiency of the switching equipment is unquestionable.

MANNER OF OPERATION IS QUITE SIMPLE

Substations without attendants may be made to start automatically in a number of ways, depending upon the conditions to be met. For the most part, however, they function through the agency of some form of remote control or automatically by means of a voltage relay which closes its contacts at some predetermined value of reduced trolley potential. In starting a synchronous converter the circuits set up cause other control relays to function in such a way as to close the oil circuit breaker, the normal field switch and the alternating-current starting switch.

Synchronism and polarity are indicated by a polarized motor relay, which, when necessary, causes the polarity of the machine to be corrected by field reversal accomplished by normal and reverse field switches which open and close automatically. Control for the field switches consists of a small magnet switch energized from the direct-current end of the converter through contacts made on a small drum switch driven in a counter-clockwise direction by the polarized motor.

It should be explained here that the field of the polarized motor relay is fixed by means of a permanent magnet, while the polarity of the relay armature becomes that of the machine, for the reason that during starting it is directly connected across the direct-current terminals of the converter. It is thus obvious that the relay armature will not rotate until the machine has pulled into step, for prior to synchronism it is receiving alternating current of a diminishing frequency, the value of which becomes zero at the instant

the converter armature reaches synchronous speed. Supply to the relay armature thus becomes direct current, causing it to rotate in a direction dependent upon the polarity of the machine.

It must also be understood that when the field of a synchronous converter is reversed, the voltage at its commutator falls to zero. Thus it is, as may now be understood, that the reverse field switch remains closed only for the instant required for the voltage to fall to zero and release the control relay. Immediately, normal field is re-established by the closing of the normal field-switch; the machine has slipped a pole, thus correcting the polarity.

The polarized relay now runs in a clock-wise direction, setting up circuits on the drum switch in such a way as to cause the alternating-current starting contactor to open and the corresponding running contactor to close. Then through interlocks, which are closed in proper sequence, the brushes are lowered to the commutator by a motor-driven device and the direct-current switches close. This connects the machine to the load through current-limiting resistance, which is then shunted in steps by switches which close through the functioning of accelerating relays. The machine remains in operation until cut out of service by the light-load control.

Protection is provided by induction type single and

polyphase relays, which prevent the station from starting under any abnormal conditions on the alternating-current line, such as low voltage, open or reverse phase. This same type of relay causes the station to shut down under unbalanced-phase conditions. If the trouble is inside of the station, a lockout relay prevents re-starting, whereas if it is outside the substation, the automatic equipment will function to bring the apparatus into service as soon as the line is restored to normal.

THERMAL RELAY PROTECTS MACHINE ON OVERLOAD

Bearings are equipped with thermostats which in the case of a hot box, lock the machine out of service until the device has been reset by hand. A thermal relay protects the machine from overheating on overload. A direct-current reverse-current relay, an overspeed device, induction-type alternating-current overload relays, a thermostat to prevent overheating of the direct-current limiting resistance, and a lockout relay which secures the equipment out of service in case of failure of any part of the apparatus are other protective features.

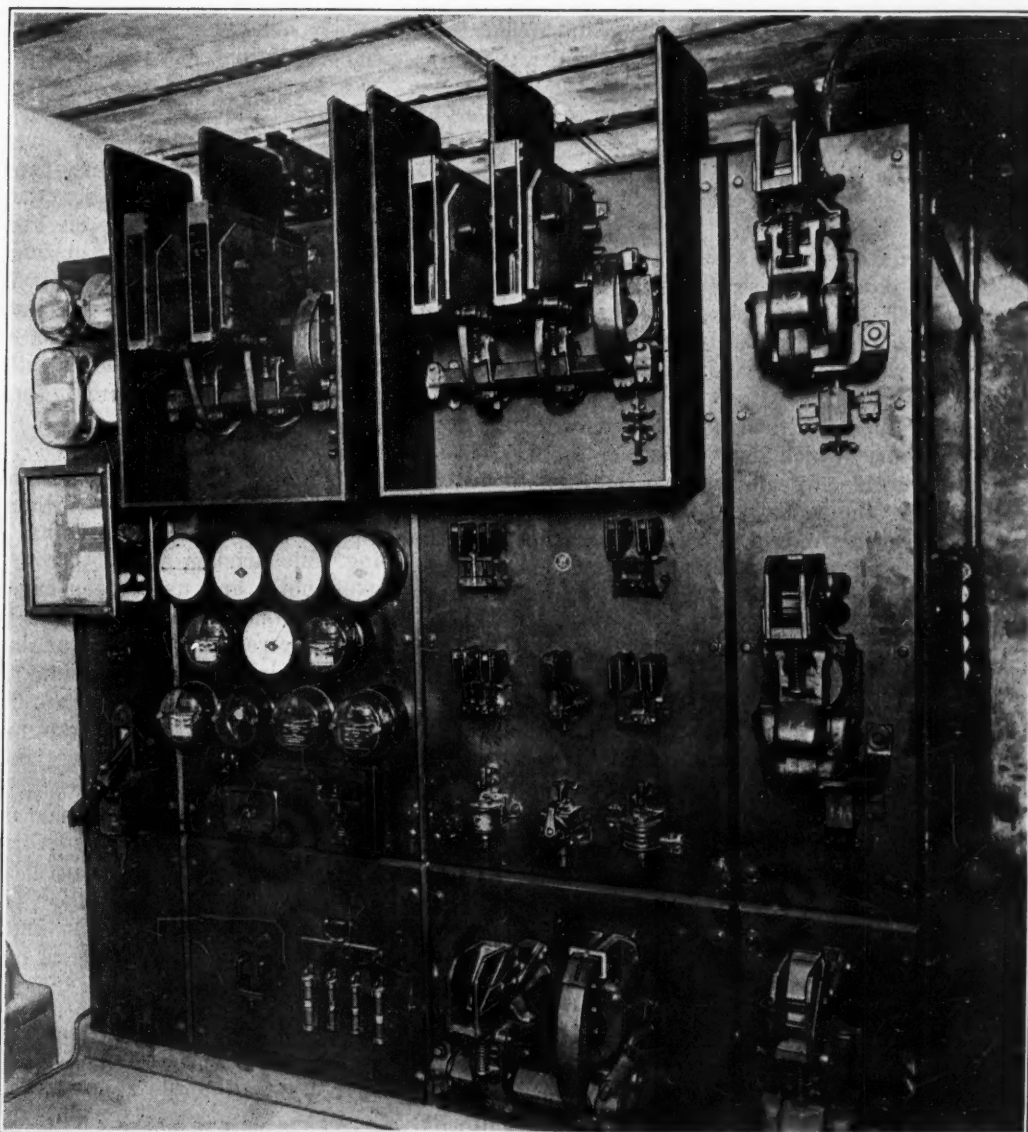
The protection of the equipment is complete. The various devices respond immediately in case of trouble, thus eliminating losses which often occur in manually-operated substations because of the inability of an operator to handle an emergency.

Control for stations equipped with two or more units

FIG. 2.

Self-Operating Switchboard

The panel on the right has three large switches that cut in resistance when the load is too great. In the right-hand middle panel near the base is the main direct-current switch, controlled by an alternating-current magnet. On the top of the two large panels are the high-voltage contactors; the one on the right is the starting and that on the left the running switch. To the left is located an incoming alternating-current panel with graphic, indicating and integrating meters as well as overload relays. The main oil circuit breaker, auto-transformer and resistance are located in the rear of the panel.



is so designed that after a load exceeding a given value has been maintained for a predetermined period of time by one machine, another is automatically connected. In case of failure of one machine, another starts and picks up its share of the load. If in starting, the first unit fails to take load within two minutes after the control receives the starting impulse, the second machine starts and the first is locked out of service. A signal connected with the lockout relay gives notice of the failure. This signal may be by pilot wires extending to some distant point or it may be a signal visible to the motormen on trips passing the station.

To obtain a clear conception of the operation of an automatic substation let us assume a fairly large mine whose workings have developed to such an extent that satisfactory voltage regulation cannot be obtained by a reasonable installation of feeders. It is decided to install an automatic substation inside of the mine containing two rotary converters. After the substation machinery has been put in place and started—well, you can't just throw the key in the river but you can forget the equipment with the exception of an inspection about once every two weeks.

SUBSTATION IDLE TILL HEAVY LOAD COMES ON

The substation lies idle during Sundays, holidays and in fact all the time when there is no demand for power. Figuratively speaking both rotaries are apparently asleep but No. 1 has one ear open listening through the feed wires to all parts of the mine and waiting for the signal to get busy. At about 7 a.m. the men begin coming into the mine, and in a short time a main haulage locomotive will hitch onto a loaded trip and start for the drift mouth.

Ordinarily night load or that resulting from the operation of cutting machines, pumps and one or two gathering locomotives does not cause a sufficient drop in voltage to interest the substation. The main haulage locomotive will, however, cause a decided drop in potential. This fact is immediately telegraphed to the substation, where a low-voltage direct-current relay receives the message.

This relay in turn without any hesitation gently prods the No. 1 rotary, which immediately gets busy. If the call for power is only momentary, lasting but two or three seconds, the rotary can settle back for another nap. If, however, the trip is started in earnest and the heavy call for power persists for five seconds or more, then the relay sends a message to the No. 1 rotary saying "All right; let's go."

IN THIRTY SECONDS ROTARY BOOSTS VOLTAGE

Things start to happen. The rotary begins to revolve, correction for wrong building up of voltage is made if necessary, the brushes let down on the commutator at the proper time, and in less than thirty seconds the machine has jumped into harness and is helping to its full capacity. If the load is of short duration, the low-current relay will pass the word along to the rotary that the work is done and it will immediately shut down and rest again until called upon by the relay.

The same thing is repeated when a second trip starts for the drift mouth. As soon as rotary No. 1 begins to operate it sends a message to the No. 2 machine to be ready at a moment's notice to jump in and help. In the meantime, the gathering locomotives are getting busy and two or three loaded trips may be moving up grade simultaneously. This may cause a load too heavy

for No. 1 rotary, in which case a load relay passes the word to the No. 2 machine to get ready, and if the heavy load persists No. 2 rotary starts up and jumps in to help No. 1 as long as the heavy demand lasts.

Sometimes a combination of circumstances arises such as to make the load too great for both rotaries. This may be caused by a motorman trying the destructive scheme of starting an exceedingly heavy trip with sand on the track and his brakes set up. The rotaries, not at all daunted, figuratively grit their teeth and hold on. No. 1 remarks to No. 2: "Say, Bill, what is that crazy motorman trying to do anyhow; pull the inside of the mine out by the roots?" No. 2 responds: "Don't know, Jim, but don't give up; let's give him a run for his money and make him sweat blood."

THERMAL RELAY SHUTS DOWN SUBSTATION

If the heavy load persists a load relay gets into the game, saying: "If I don't take a hand those fool rotaries will burn themselves out rather than give in to that crazy motorman." Accordingly he gently slips a few frames of resistance into the circuit, which reduces the voltage and shifts some of the load to the power plant or to some other substation. This is done in one, two or three steps, depending upon the severity of the overload. If it does not produce desired results, the resistance will stay in the circuit until it becomes as hot as is safe, and then a thermal relay steps in and calls a halt by opening the circuit and shutting down the substation. As soon as the grids have cooled down to a predetermined temperature the substation will resume operation with either one or both rotaries, as the existing load conditions may require.

One or both rotaries thus operate until the lunch hour, when both will shut down and rest until the afternoon work begins. Some of the feeders may be equipped with automatic reclosing circuit breakers. Where frequent short circuits occur this is a better scheme than the resistance relays, as explained above. With the automatic reclosing breaker an extremely heavy load or a short circuit on a feeder will cause the breaker to open. It will then remain open until the short or overload is removed.

CAN SIGNAL TO MAINTENANCE CREW FOR HELP

Along in the afternoon, when only No. 1 rotary is operating, we will suppose that it develops a hot bearing, this arising possibly from any one of many unexplainable and unforeseen causes. The bearing thermostat—one is placed on each bearing—does not wait until any real damage is done, but promptly shuts down the machine, at the same time signalling over to No. 2 rotary to get on the job. No. 2 machine doesn't waste any time asking what's the matter but immediately jumps in and is on the line taking up the load before No. 1 has ceased to revolve.

In the meantime the thermal relay on the bearing has sent out an emergency call for the maintenance crew by means of any one of many schemes, such as lamps or bell signals at some point from which help can be summoned by phone. In a short time the bearing is fixed up and the substation is once more in normal condition.

At quitting time the station shuts down and thus remains dormant until called into action the following day by the load condition inside the mine. If the alternating-current voltage drops below a certain value at any time or one phase of the power system is opened,

the substation will shut down until normal conditions are re-established. The substation equipment is always awake when power is available and always does the right thing at the right time.

The saving in operating expense and the much improved service afforded well warrant the nominal increase in first cost of the automatic over the ordinary manually operated substation.

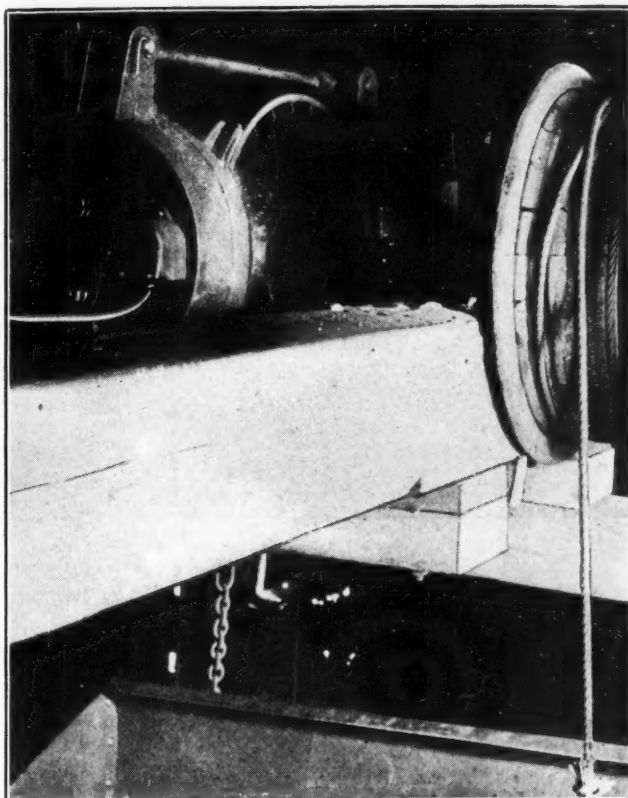
San Juan County Field, New Mexico

MUCH coal of good quality is found in the San Juan Basin of northwestern New Mexico and the adjacent part of Colorado. At several places where shipping facilities are available, such as Durango, Col., and Gallup, N. M., this coal has been mined for many years, and the number and thickness of the beds are well known. In much of the basin, however, the coal is virtually untouched, and as only rapid examinations of the beds have heretofore been made, little has been known regarding their exact distribution and value. This want of information has recently been supplied for the part of the basin that lies in middle and eastern San Juan County, N. M., by a survey made by C. M. Bauer and J. B. Reeside. The report of this survey has been published as U. S. Geological Survey Bulletin 716-G, a copy of which may be obtained by applying to the Director, U. S. Geological Survey, Washington, D. C.

Eliminating One Man at a Coal Tipple

SOME months ago the Sterling Coal Co., of Salineville, Ohio, introduced an electric brake at its coal tipple with the purpose of eliminating the services of one man. Formerly, after the coal was dumped from the coal car into the weigh pan, the workman would have to wait until he received a bell signal from the weighboss permitting him to release the rope-operated band brake. The company conceived the idea of making it possible for the weighboss to do this work himself, thus leaving the dumper a chance to perform his other duties, and for that purpose it installed a Cutler-Hammer electric brake.

The pan weighs about 1,000 lb. and holds approximately 2,500 lb. of coal. It is counterweighted by about 2,000 lb. Yet this heavy load is discharged by a push-

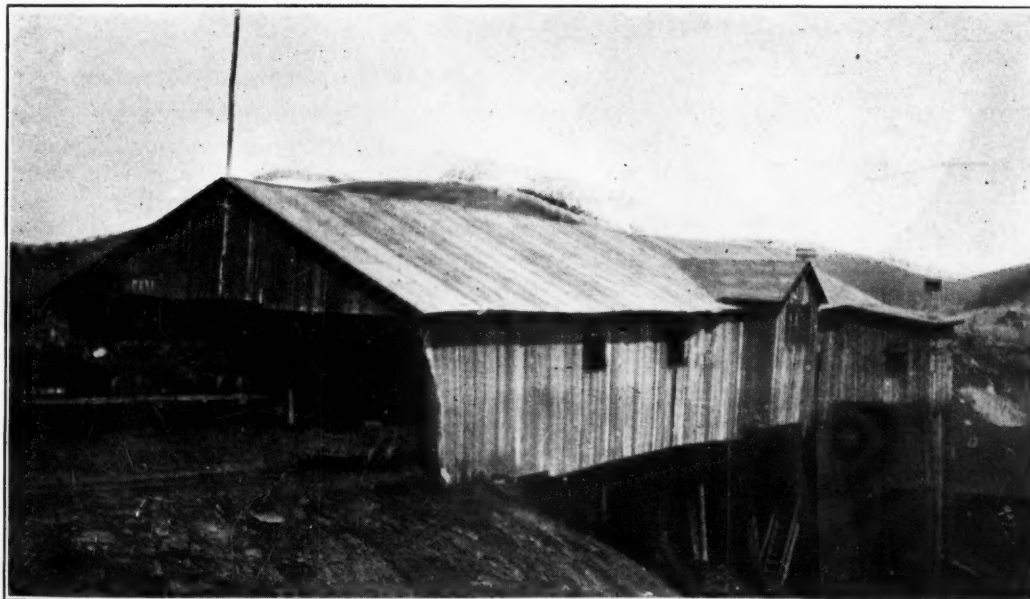


MECHANISM BY WHICH WEIGH PAN IS DUMPED

Though pan and coal weigh together 3,500 lb. and are counterweighted by only about 2,000 lb., the brake, which keeps the pan in place, is actuated by an electro-magnet controlled by a push button.

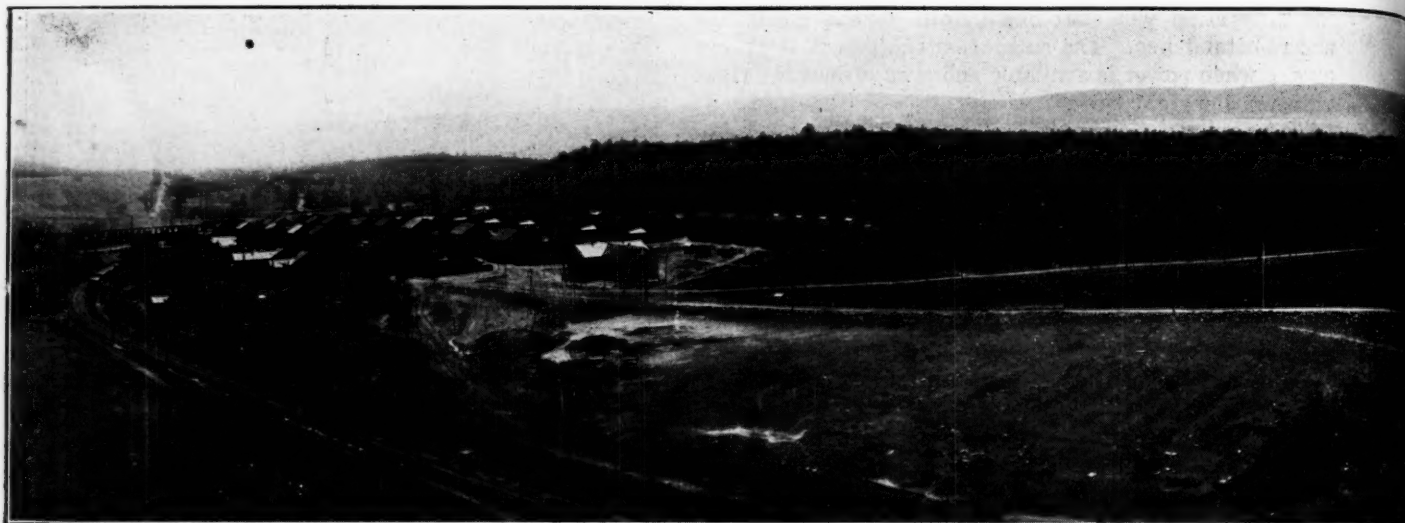
button operated by the foot of the weighman. Without signaling to anyone, he can release the brake. One of the accompanying illustrations shows the coal tipple with coal cars entering and the other is a close-up view of the mechanism.

This brake is operated on a direct-current electric circuit, and the magnetic coils are not only thoroughly inclosed in a cast-iron housing but have a waterproof winding also. This type of brake requires little more headroom than the brake wheel. For places where only alternating current is available, a similar brake is made but with the magnet replaced by a small pilot motor.



Sterling Tipple

Small tipples are labor-wasters, but at this one the weighboss by pushing a button can release the weigh pan and so let the coal slide into the railroad car. The dumper consequently does not have to wait till the contents of the car have been weighed but can go about his duties unhindered.



PANORAMA OF BREAKER AND VILLAGE, PENNSYLVANIA

BY DEVER C. ASHMEAD
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A FEW years ago the breaker at the Pennsylvania colliery of the Susquehanna Collieries Co., near Mt. Carmel, Pa., threatened to fail. So pronounced did this weakness become that it was at first believed that the ground upon which the building stood must be settling. It was felt, however, that serious surface subsidence was impossible, as no coal had been removed from underneath the structure. Nevertheless, it was certain that the foundation of the building was giving way and that the ends of the main columns were failing.

After canvassing the proposal to build a new breaker, it was finally decided to repair the old breaker and take advantage of that repair as an opportunity to change some of the methods of preparation. In consequence, the whole installation was completely remodeled and modernized. Not only have the best practices, as followed in other modern breakers, been adopted but some new and original ideas have been developed.

All water tanks have been removed from the reconstructed breaker, thus relieving the structure of their weight. The column pipe from the mine is extended

Preparation Methods Into Reconstructed

Jigs Are Placed Stepped Down
Chute for Feed and Another for
Screened and Hand-Picked for
Undersize Going to Condemned-

to the top of the building, where it discharges into a trough that feeds the many appliances that the structure houses.

In the reconstruction of the breaker Wilmot jigs were substituted for Reading jigs. The installation of the Wilmot jigs presented a difficult problem, as there was insufficient room for them if they were placed in the ordinary manner. To overcome this, the jigs are set in steps or in vertical *échelon*, as shown in the elevation at the bottom of Fig. 1. This setting necessitated an entirely new arrangement of both feed and discharge chutes. It, however, possesses a positive and distinct advantage over the arrangement previously employed, only one feed chute being required where five formerly were needed.

ARRANGEMENT ASSISTS FEED AND DISCHARGE

As is well known, a jig does its best work when fed evenly and uniformly with the proper amount of material. Such a machine will not give good results when fed with alternately large and small quantities of coal. By the new arrangement the opening in the feed chute leading to the lowest jig is so proportioned that it will pass the amount of coal for which the jig is proportioned. Coal coming down the feed chute passes to the lowest jig first. When the opening to this machine is feeding to its capacity the material builds up in the chute until the second jig begins to take coal. After the capacity of this machine has been reached, the coal again builds up and begins to discharge to the next jig and so on until all are in operation. Power is not turned onto any machine until coal begins to feed to it. As a result at no time does more than one jig operate below capacity, and no energy is consumed by jigs running idle. Furthermore, no machine ever is overloaded.

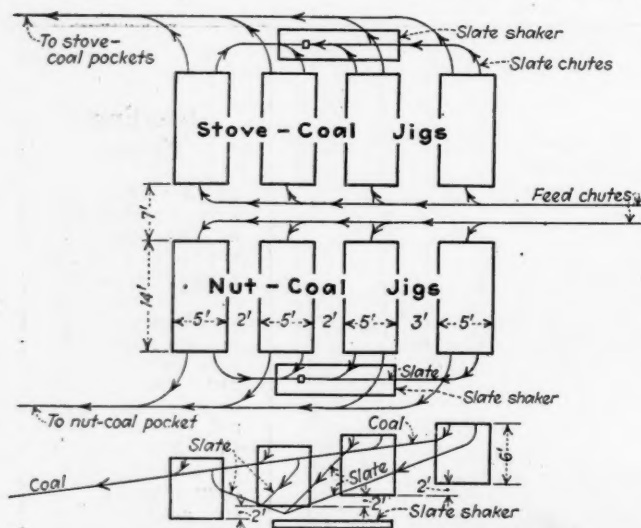
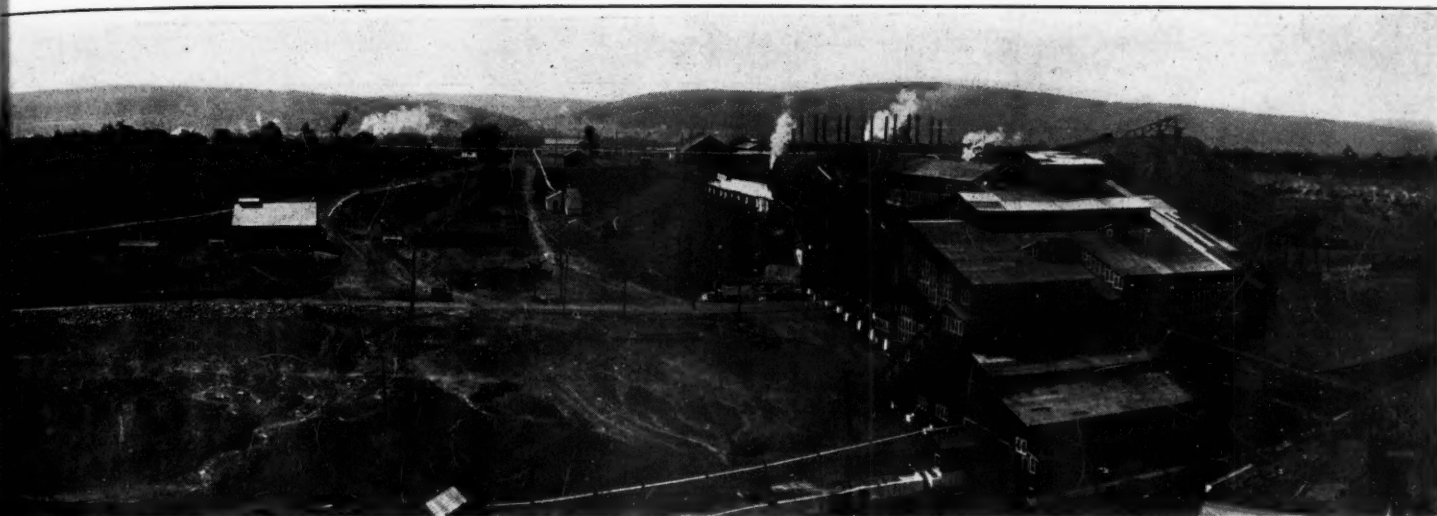


FIG. 1. ARRANGEMENT OF WILMOT JIGS IN ÉCHELON

Lack of room made it necessary to set the Wilmot jigs in steps, but this was not a disadvantage, as it made easier the distribution of the coal to the various machines.



COLLIERY, SUSQUEHANNA COLLIERIES CO., MT. CARMEL, PA.

Susquehanna Has Built Pennsylvania Breaker

Like a Stairway, Using a Single Discharge—"Rock" from Jigs Is Clean Coal of Size Just Washed, Coal Conveyor for Retreatment

Not only does the arrangement of jigs above described assure better feeding but it assists also in obtaining a better discharge. Just as the feed for the jigs is conveyed by a single chute so the discharges of coal from them are aggregated in a chute that leads direct to the pocket. Its contents are visible throughout its entire length and a single examination reveals at any time the results being obtained from the entire battery of machines, whereas ordinarily it is necessary to inspect the contents of as many chutes as there are

jigs. The slate discharge goes to a slate shaker placed below the jigs. This also is visible to the jig tender, and thus he may readily observe whether coal is coming over with the slate.

But there are other advantages in this arrangement. Not only is the coal better prepared but the jigs, as installed, occupy less than half the room necessary with the old arrangement. This results in large measure from the fact that the chutes, both feed and discharge, are reduced to a minimum length. Furthermore, both chutes and jigs can be more readily watched and regulated.

SEVERAL CONVEYORS INSTALLED IN BUILDING

As has been previously stated, this breaker is now an old structure. It is not sufficiently high for the entire work of preparation to be done by means of gravity. Throughout the following description the mention of numerous conveyors evidences that fact. Aside from this, however, the equipment and preparation are both strictly modern.

Loaded mine cars are run into the top of the build-

FIG. 2

End of Battery of Jigs

The long discharge chute which receives the coal from all the jigs is shown in the foreground as is also the vertical box chute. Beneath the former may be seen the slate shaker.



ing, where they are discharged by means of a steam dump (1)—see accompanying flow sheet, Fig. 3—into a hopper (2). Thence the coal passes onto the bull shaker (3), which separates the lump (4) and steamboat-and-broken (5) from the fine (6). The lump goes to a picking table (7), where the rock (10) is separated from it, being sent directly to the rock pocket (120). Sometimes it is necessary on this picking table to "cob" or break the rock with hammers in order to permit it to pass down the rock chute. After being picked the lump coal (9) passes to the No. 1 rolls (12) and thence to a shaker (17), onto which is also passed the steamboat-and-broken coal from the bull shaker (3). Here a separation into steamboat (22), broken (23) and fine coal (24) is made.

The steamboat coal (22) passes to a picking table (30), where the rock (42) is separated from it, being sent to the rock chute, and the coal goes to the No. 2 rolls (53). After crushing, the coal is elevated by the elevator (66) to the top of the breaker, where it is delivered to the shaker (76). Here steamboat (82), if there is any, broken (83) and fine coal (84) are separated from each other. The steamboat isolated at the point is sent by means of a chute to the No. 2 rolls (53) for recrushing. Broken coal (83) from this shaker joins with the broken from shaker (17) and passes to two Christ jigs (31).

Clean broken coal from these machines goes to the broken-coal pocket (115). The rock passes over a shaker (54). The product passing through this screen goes to the condemned-coal elevator (119) on its way back through the breaker for retreatment. Material passing over the shaker (54) is hand-picked for coal removal, the coal recovered (85) being sent directly to the broken-coal pocket (115), and the rock (86) is delivered to a horizontal dragline (59), which takes it to the rock bin (120).

Fine coal (84) from shaker (76) is delivered to a hopper (92), from which it is fed to a shaker (95), where it is separated into egg (96), stove (97) and finer (98). The egg coal (96) is treated in the Wilmot jigs (99), the cleaned product (101) being taken by a dragline (111) to the egg pocket (116). Rock from these jigs (102) receives the same treatment as that accorded the refuse from the Christ jigs (31). In case insufficient orders for egg coal are on hand this size can be sent to the No. 4 rolls (110), crushed and taken back by the elevator (66) for re-treatment. Arrangements also are made for sending the broken coal (83) to the No. 2 rolls (53) for crushing in case there are no orders for this size. We will now leave this side of the flow sheet, as the sequence of operations is self-evident and needs no further explanation.

Fine coal (6) from the bull shaker (3) goes to a hopper (8), from which it is sent to a shaker (11), on which egg (13), stove (14), chestnut-and-pea (15), and finer (16) are made. The egg coal is sent to a Christ jig (18), where it receives the same treatment as that already described as being accorded to broken coal. The clean coal from this jig is sent to its proper pocket.

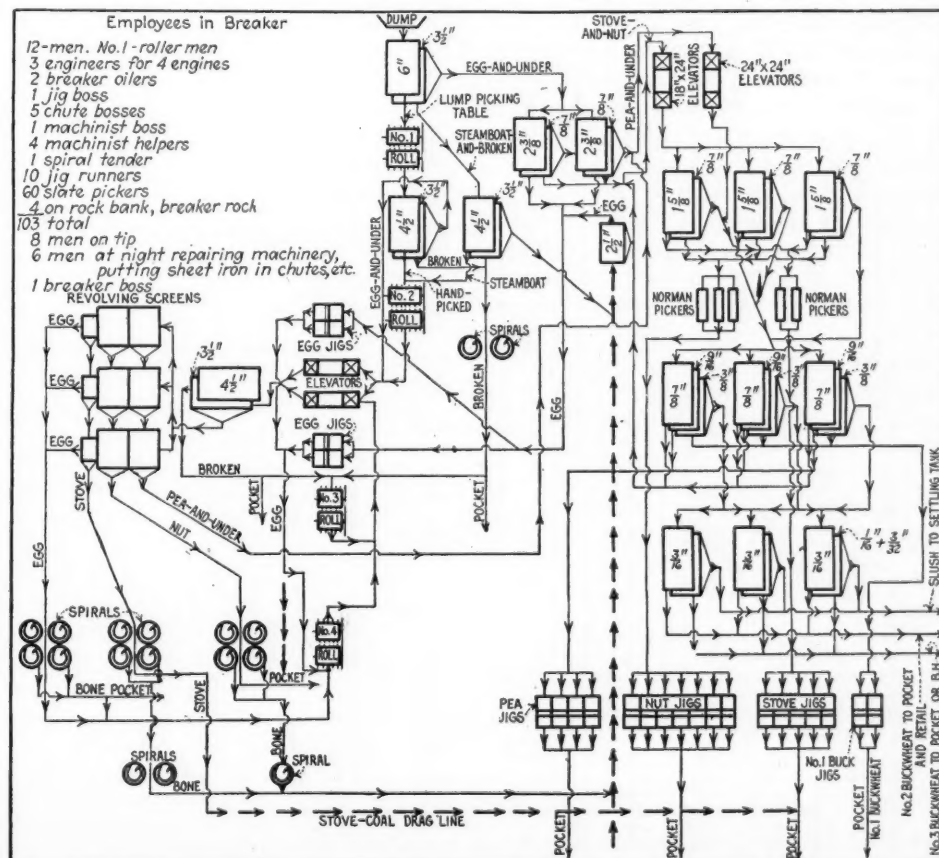
FINES FROM STOVE-COAL JIGS ARE RE-TREATED

From shaker (11) the stove coal (14) is conveyed by a dragline (19) to four Wilmot jigs (27). Coal of the same size from shaker (95) on the large-coal size of the flow sheet also is treated in these same machines. The cleaned product (33) goes to the stove pocket (117). Fine coal (56) from the discharge of these machines after passing the slate shaker (47) goes to the condemned-coal conveyor (119) to be taken back for re-treatment. Rock (57) passes to the dragline conveyor (59) by which it is delivered to the rock pocket (120). Chestnut-and-pea coal (15) is taken from a shaker (11)

FIG. 4

Old Flow Sheet of Breaker

Under the old arrangement there were thirty-three shakers, seventeen spirals, four pairs of rolls, twenty-two jigs, three revolving screens, four elevators, five Norman slate pickers, two engines and one pump. Note how completely the plant has been reconstructed. The old breaker required 103 men to operate it, whereas as rearranged and modified it now only demands the labor and attention of about seventy of these employees, leaving the rest free for other work.



by a dragline conveyor (20) to the top of the breaker and delivered to a shaker (28). Into this same conveyor is delivered the fine coal (98) from shaker (95).

The condemned-coal conveyor (119) discharges its burden into what is called the "baby shaker" (112). This separates the material into two sizes—that above chestnut and chestnut-and-under. The oversize passes to elevator (66) and the chestnut-and-under to the dragline conveyor (103), which takes it to shaker (28), where chestnut (35) and pea (36) are separated from the smaller sizes. The chestnut coal is treated in four Wilmot jigs (48), after which it receives the same treatment as that given the stove coal. Instead of traversing an ordinary chute this coal passes through a box chute in going to its pocket.

Pea coal from shaker (28) goes to one Wilmot jig (49) for cleaning. Fine coal from shakers (11) and (28) is taken by a dragline conveyor (21) to shaker (29). Here No. 1 buckwheat (38), rice (39), and barley-and-culm (40) are made. The buckwheat and what smaller size may be carried over with it goes to a re-shaker (50), where the rice (61) separated from it is joined by the rice (39) from shaker (29). The buckwheat then goes to a Wilmot jig (75), from which the cleaned product (80) passes to the coal

pocket (122). The rice coal (61) and (39) goes to a re-shaker (51), where it is separated from the barley-and-culm (63), after which it passes to its pocket (123). The barley-and-culm from shaker (51) goes to shaker (52), as do the similar sizes from shaker (29).

On shaker (52) the barley (64) is separated from the culm (65) and goes to the barley pocket (124). A dragline conveyor (58) takes the culm to the culm bank (125). In case it is desired to use rice and barley for fuel in the power plant, they are mixed and taken by a dragline conveyor (127) to this building. Also should there be on hand insufficient orders for No. 1 buckwheat, this coal may be sent to a storage pile instead of to the pocket. Coal passing the lip screens is taken by the condemned-coal conveyor (119) back into the breaker for re-treatment.

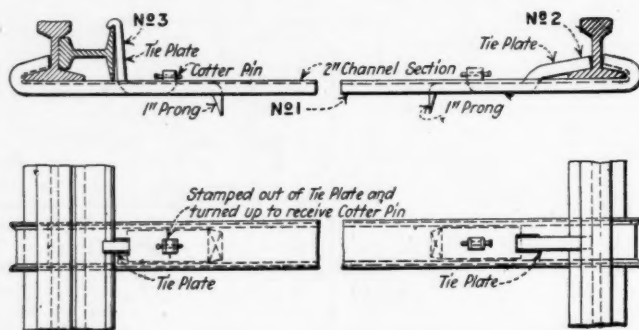
A comparison between the present flow sheet and one in use only four years ago may be of interest. This will show not only the advance made in the science of preparation but to a marked degree the changes in equipment that have been made. In the older flow sheet will be noticed the old revolving screens, the Norman pickers, the spirals and the old type of jigs. Formerly 103 men were required in this breaker. At present about thirty less produce an equal output.

Steel Mine Tie That Will Not Slip Under Stress of Traffic

Prong on Tie Plate Engages the Mine Floor, Keeping Tie in Place — Device Provides for Holding Rail on Side for Track Extension

A NEW type of steel mine tie designed to prevent either longitudinal or transverse displacement of the track has been invented and patented by C. T. Grimm, of Adrian, Upshur County, West Virginia. Up to the present it is not being manufactured, but arrangements have already been made to that end.

Simplicity has been one of the main objects sought in the development of this tie. Wooden wedges, bolts, nuts, rivets and similar devices which have a tendency to work loose, permitting the track to spread or shift its position under the action of the mules' toe calks, have been studiously avoided. As will be further described later, a firm hold of the mine floor is secured by means of a prong on either tieplate. Provision has been made so that a tie or portion of track may be readily dismantled and moved from place to place. Another detail worthy of consideration is the means provided for holding a rail on its side when extending a track to the face.



PRONGS ON UNDER SIDE OF TIE KEEP TRACK IN PLACE
Provision is made for holding an extension rail as well as the regular track. No. 1 is the tie proper and Nos. 2 and 3 are two forms of tie plate either of which may be used with it.

This gives the loader more clearance between top of rail and roof than can otherwise be secured.

The tie and rail fasteners consist of five pieces all told—the tie proper, two tieplates and two cotter pins. As may be seen in the accompanying illustration, the tie itself is made from a channel iron of shallow depth, the ends of which have been turned up and reflexed so as to grip the flange of the rail for which the tie is designed. Four rectangular openings are punched near either end of the tie for the purpose of receiving the tieplates. These latter may be of two shapes, one designed to hold the rail in its normal position and the other to grip a rail lying upon its side.

In laying track the ties are put down, the rails laid upon them and driven to place in the end grips, after which the track is raised, the ends of the tieplates inserted in their proper holes, pushed through to place so that a lowering of the track forces the upward extension of the tieplate through its hole in the tie and the end of the plate against the rail flange. The tieplate extension is provided with a hole through which a cotter-pin, preferably of the split type, may be inserted. Insertion of the cotter pins completes the placing of the rail. The tieplates, as may be seen in the accompanying drawing, are provided with a prong extending downward about 1 in. from the lower extremity of the tie. Driving the prong into the floor of the mine holds the tie and track securely in place and prevents either lateral or transverse movement.

The simplicity and convenience of this arrangement are at once apparent. By the use of this tie not only is shifting of the track avoided but the shape of the tie prevents spreading of the rails. The only part which is small enough to be lost is the inexpensive split cotter pin. Such a pin may be readily purchased and easily inserted or withdrawn. When put in proper place and its ends spread it will neither work loose nor fall out. The other parts, although much larger and more expensive, may be readily manufactured, punching and bending operations alone being necessary. The tie is thus inexpensive to manufacture and efficient in use.

Single Roll Crusher Is Well Safeguarded Against Breakage by Tramp Iron

Four Rods Opposing Helical Springs Hold Frame Together—For Fine
Crushing Reversible Wearing Strip Is Provided in Lower Portion of Breaker
—Shear Pin Made Small Enough To Be Safely Constructed of Mild Steel

EXTENSIVE introduction of automatic stokers in power plants has resulted in a demand for stoker coal that not infrequently exceeds the supply of slack produced at the mine or procurable in the open market. This has led to the installation of crushing equipment at many mines to enable the operator when occasion demands it to produce this fuel from run-of-mine or from nut, egg or cobble.

Crushing devices of various kinds have been developed to perform this work, but those now most commonly used are of the roll type. Of these, two varieties exist, namely, the single- and double-roll machines. Though each of these varieties possesses its own distinct advantages the single-roll machine appears to be the better adapted to reducing large lumps to stoker size in one operation.

TIE RODS REINFORCE UPPER PART OF FRAME

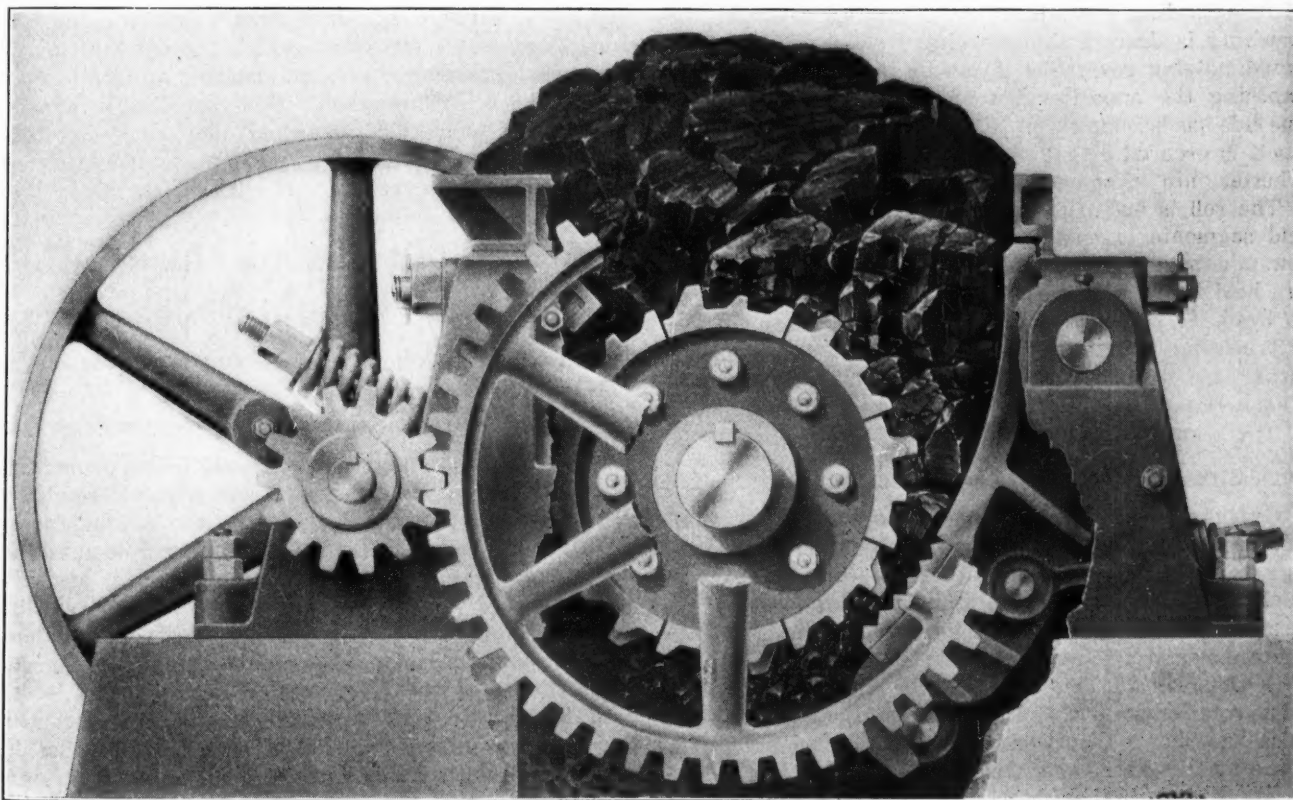
As manufactured by the Pennsylvania Crusher Co., this machine embodies many refinements over earlier types of the same device. As may be seen in the accompanying illustration, the upper portion of the frame is held together—or rather reinforced—with heavy through tie rods. These adequately reinforce

the frame to withstand the heavy stresses imposed when large pieces of tramp iron are unintentionally introduced.

The concave breaker plate is hung by and swings upon a heavy transverse rod near the top of the frame. This plate, which is of charcoal iron deeply chilled, is held between and adjusted by four rods arranged in pairs, both pairs being attached to the breaker plate near its lower extremity. One pair of rods extends forward from the plate through the frame, and then through heavy helical springs.

The nuts on these rods are screwed down until the springs are under such tension that any lump of coal that can enter the machine will be crushed without starting the plate from its position. The other pair of rods are in reality eyebolts and extend rearward from the plate to a cross member of the frame, holding the plate in the location desired against the springs above mentioned. When a hard foreign substance finds its way into the machine, however, the plate may move as much as 3 in., which is enough to pass any ordinary piece of tramp iron.

For ordinary crushing the tip or lower portion of the breaker plate is provided with a renewable wearing

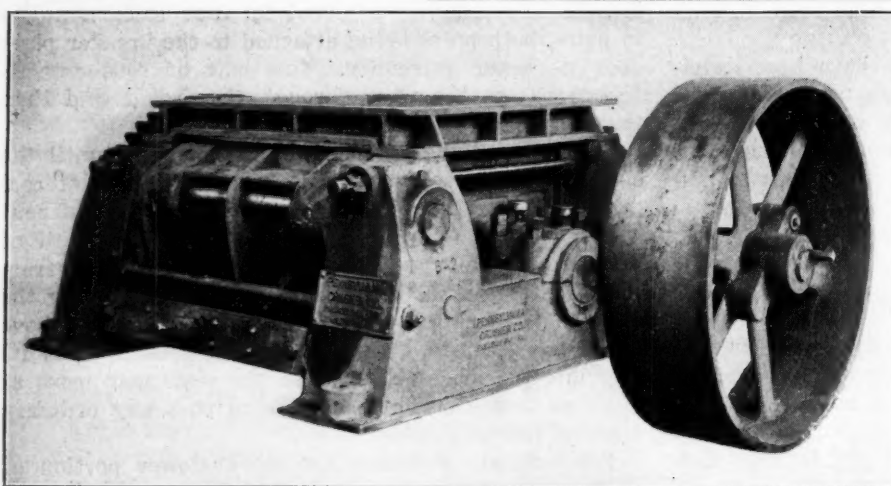
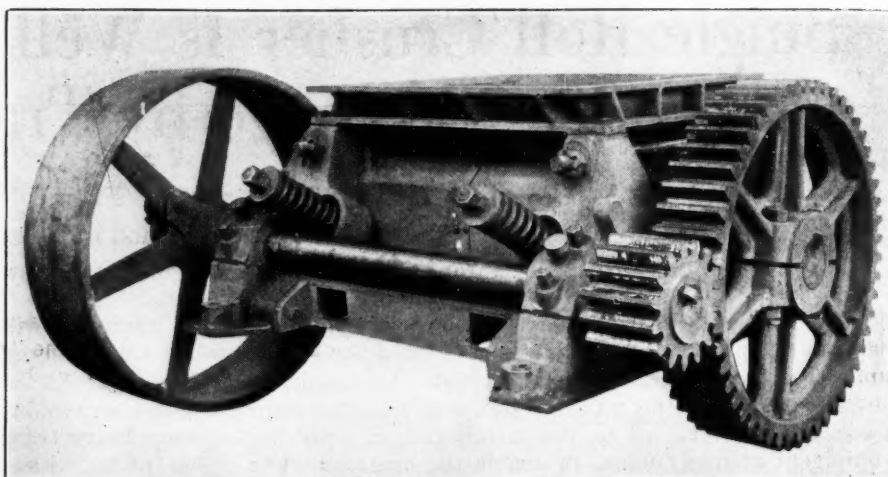


BROKEN VIEW OF CRUSHER, SHOWING MANNER IN WHICH COAL IS PROGRESSIVELY CRACKED INTO SMALL SIZES

Note the helical springs, which have "give" enough to permit tramp iron to pass through the crusher without injury, the small machine bolt of mild steel that saves the machine from being fractured if helical springs fail to give enough leeway and the reversible corrugated plate for fine crushing situated close to the point of discharge.

Front View

This shows clearly the method of holding frame together by bolts, and also the machine bolt, the shearing of which stops the machinery if the "nut" which the machine has to crack is too large and hard.



Rear View

The crusher is designed for great strength, as it is a piece of machinery that normally has hard work and may by inadvertence be subjected to usage that would wreck any other machine except perhaps a stamp mill or sledge hammer.

piece extending the full width of the machine. If fine crushing is desired this wearing strip is made corrugated. Being reversible it can be turned end for end, exposing the opposite side of the corrugations when one side has become worn. The face of the breaker plate itself is grooved diagonally in both directions, giving it a better "nip" than would otherwise be provided.

The roll is built up of the two end pieces, or heads, and segments extending between them. Tapered hollow pins attach the segment lugs to the heads. These are held in place by through rods extending from head to head. When it is desired to remove a segment the rod holding it is withdrawn, the hollow taper pin in either end is knocked out and the segment is free. This arrangement greatly facilitates removal or renewal of the segments.

SHEAR PIN AN ORDINARY MILD-STEEL BOLT

Ordinarily this machine is driven by belt through one reduction gear. In order to forestall serious damage to the machine in case some foreign substance, such as a heavy piece of tramp iron, larger than the tension springs would permit to pass, finds its way into the crusher, a shear pin is provided in the belt wheel. The shearing of this pin permits the wheel to continue rotation while the roll remains stationary. Experience has shown that when a wooden pin is used in a place of this kind, and shears off a strong temptation exists to replace it with the first bolt or other suitable piece of iron that comes handy.

To obviate resort to this expedient the shear pin in this case is made of metal, it being an ordinary mild-steel machine bolt. This not only renders replacement

easy but effectively guards against subjecting the machine to excessive stresses through the substitution of a material possessing greater shearing strength than was intended. Throughout, this machine is heavily proportioned, carefully designed and ruggedly constructed. It is the outcome of many years of experience in the building of crushers.

Even Lightest of Cars Opens Mine Door Without Shock

Motion of a Rail Which Cars Mount Revolves Bevel Gear Whereby Door Is Opened and a Weight Raised—Weight Shuts Door After Cars Pass

EVERY mining man is familiar with the doubt and the danger connected with doors which depend for their closing on the thoughtfulness of the last man passing through them. If from ignorance, carelessness or preoccupation he leaves a door open there is, at least in some mines, a certainty that certain sections will be rendered so unsafe that a disaster, a severe accident to some individual or at least a suspension of work will be inevitable.

He knows also that the length of time that the door is open tends to be a period of suspended ventilation and he desires that this time be made as short as possible in order that the men may get good air, that gas may be eliminated and that the fan be saved the burden of starting inert air. Moreover, there often is the risk that a runaway trip will enter an unopened door, and the use of a truly automatic door meets that difficulty.

The door illustrated in this article is designed to meet these needs. As may be seen, it is double and always opens gradually and without shock away from the approaching trip by which it is actuated.

The operation is extremely simple. An angle iron or false rail is placed just outside the track rail and extends for a suitable distance, usually about 23 ft., upon either side of the door. This angle iron is supported upon rocker arms pivotally attached to malleable iron brackets securely fastened to the flange of the rail. The false rail is thus normally about 2 in. higher than the track rail but is free to move endwise upon its supporting rocker arms.

HOW GRADUATED MOVEMENT IS OBTAINED

The rocker arms supporting the false rail are of two types. Those nearest the door are joined to the angle by pivot joints allowing no play, which gives all these arms a uniform range of motion. Those that support the extremities of the angle iron or what are known as the "lead rails" are pivoted to the angle by means of rollers working in slots of graduated length, thus giving a gradually varied range of action to the rocker arms. A bar, rod or bridle ties the four outer rockers together, compelling them to act in unison and in conjunction with the "trip" or trigger to which the bridle is connected by means of a shorter bar.

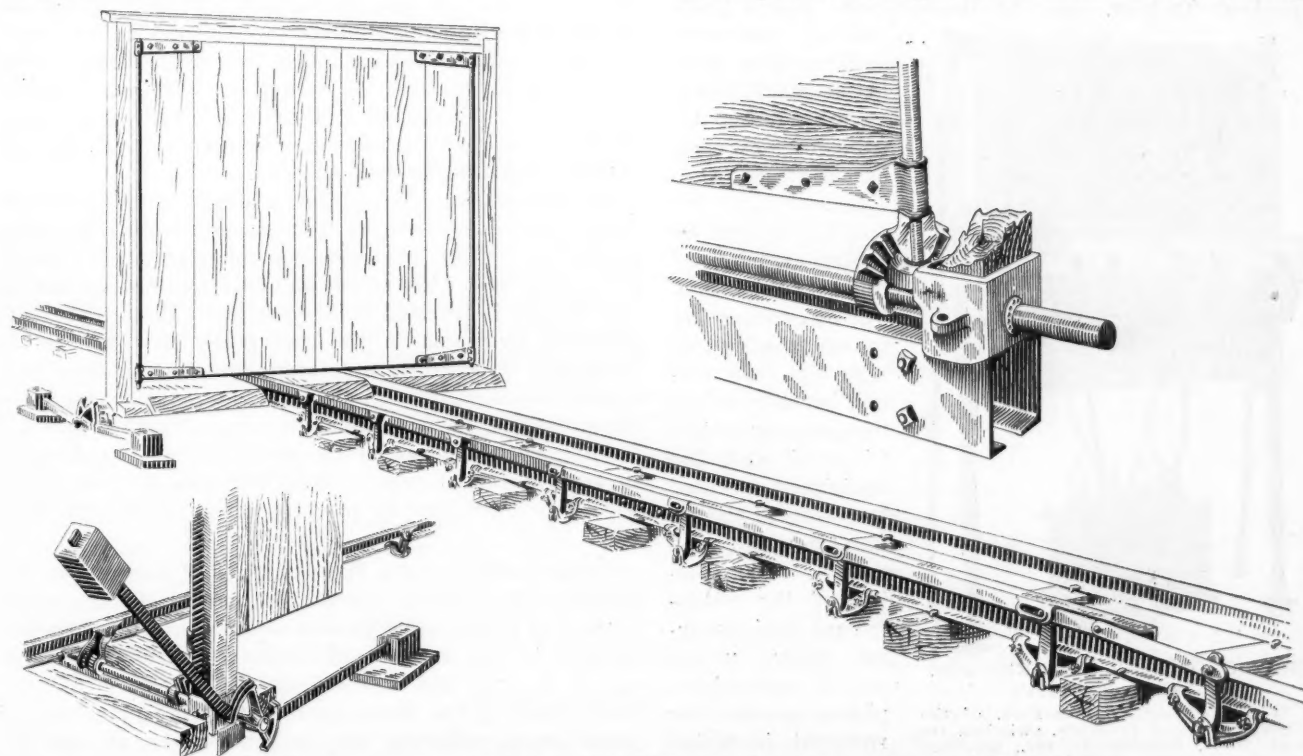
When the doors are closed the trigger stands vertical and extends about 1½ in. above the rail. When a car approaches the door, however, the wheel tread strikes the projecting end of this trigger and pushes it down to a level with the top of the rail, simultaneously forcing the four rockers connected to it to the extremities of their respective slots. As these slots are graduated in length the rockers are thrown beyond center to varying angles and the end of the false rail is inclined slightly downward, its extremity being about 1 in. above the top of the track rail.

As the face of the wheel tread mounts the false rail and forces it down to the height of the track rail the angle iron is given a gradually increasing longitudinal movement parallel with the track. At the door the false rail is connected by means of a rocker arm to a shaft extending transversely across the track. Near each post of the door frame this shaft carries a bevel gear or quadrant that meshes with a pinion on the vertical shaft to which each half of the door is fastened, the shaft in reality forming the hinge upon which its half of the door turns. Movement of the false rail is thus communicated to the transverse shaft and from it to the door sections, with the result that the door opens gradually and without shock upon the approach of a car or locomotive regardless of its speed of travel. The door stands fully open by the time the load has reached the fifth rocker arm.

The transverse shaft above referred to extends out to one side of the track and is there fitted with double arms, each working within a quadrant and each bearing an adjustable counterweight. The horizontal shaft is hung in roller bearings and the two vertical shafts are supported on ball bearings, so that the entire mechanism operates with great ease. The counterweights are thus sufficiently powerful to return the door to its closed position when the car or trip has passed the farther end of the false rail. Closure is, of course, made in exactly the reverse order from the opening movement, both operations being gradual.

FOR MULE HAULAGE FALSE RAIL IS LENGTHENED

The weight of one man upon the center of the false rail is sufficient to hold the door in its open position, so that almost any car that could possibly be used in a mine has sufficient weight to operate the door. Where mule haulage is employed it is of course necessary to extend the false rail farther from the door for a distance equal to the length of the animal and his hitching.



AN ANGLE IRON SUPPORTED ON ROCKER ARMS PROGRESSIVELY OPENS DOOR

An approaching car or trip first strikes the trigger, which is thereby depressed. This movement compels the rocker arms by which the angle iron is supported to lean

over in the proper direction. When the car or trip comes in contact with and mounts the auxiliary angle iron rail the door is gradually and progressively opened away

from the oncoming car. This movement raises one of the two counterweights acting through a double quadrant on the end of the transverse shaft.

With the above arrangement it makes no difference from which direction or at what speed the locomotive, car or trip approaches. In any case the door opens gradually away from the oncoming trip and attains full opening before the trip reaches it. It remains in this position until the trip has passed completely through and beyond the door, when it closes gently and without shock. The advantage of this arrangement is obvious. Doors of this kind have been in operation for many months and are giving excellent results. They are manufactured by the Dinwiddie Steel & Mfg. Co., of St. Louis, Mo.

Panel for the Control of Motor-Generator Sets from a Remote Point

IN MINES and other places where the supply of direct current is obtained from a motor-generator set it is frequently advantageous to control this equipment from some remote point, thus eliminating the necessity of an attendant at the switchboard. Several mines are using with their motor-generator sets the automatic control panel shown in the accompanying illustrations. This has all the protective features embodied in the small modern switchboard and may be controlled from any remote point by means of an ordinary snap switch.

This automatic equipment, manufactured by the Cutler-Hammer Mfg. Co., of Milwaukee, Wis., consists of the necessary circuit breakers, switches, relays, fuses and recording instruments mounted on slate panels carried on a floor type of frame. The primary equipment of the control panel shown in the illustration consists of a hand-operated oil circuit breaker provided with inverse time overload attachments, a phase-failure and phase-reversal relay, and an automatic starter of the auto-transformer type. This is to be used with induction motors, but the same general equipment with a few slight changes can be employed with machines of synchronous type. On the direct-current side a knife

switch, voltmeter and ammeter with the necessary fuses, and an automatic reclosing circuit breaker are provided.

With the remote control switch "on" the controller may be operated by merely closing the main-line oil circuit breaker, or the breaker may be left closed and the equipment operated by means of the remote control switch. The closing of the phase-failure and reversal relay, unless one or more of the phases are open or reversed, in which case the abnormal condition must be removed from the

line before the relay will close. This instrument also has the characteristics of a voltage relay—the equipment will not operate if the line voltage is low.

After the relay closes, the automatic starter connects the motor through an oil switch to the low-voltage taps of an auto-transformer. When the equipment has come up to speed, this oil switch opens and a second oil switch connects the motor directly to the supply line, at the same time completing a circuit to the closing coil of the automatic reclosing circuit breaker, which immediately closes, establishing the generator voltage on the direct-current feeders.

In case of an overload on the direct-current side, the circuit breaker opens, and recloses when the overload is removed. The oil switches used on this equipment consist of an operating magnet of the clapper type which is mounted on the supporting frame of the switch and actuates the switch mechanism by means of a connecting rod extending through the top of the case. Both the stationary and moving contacts of the switch are carried on square insulated shafts and are easily accessible. These control panels can be furnished in different capacities up to 300 kw. and, if desired, can be built for operating two motor-generator sets in parallel.

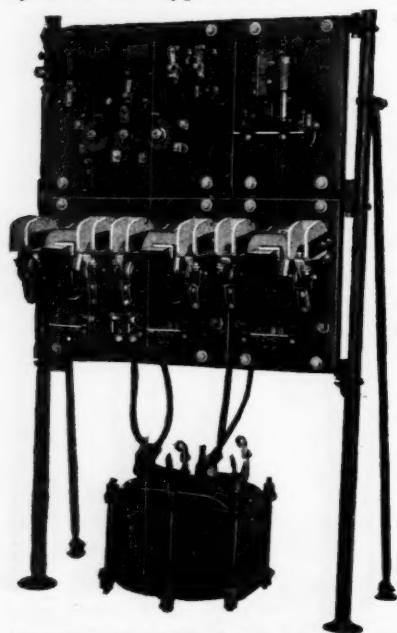
Alcohol Made from Coal at Skinningrove

APAPER by Cecil F. Tidman at a joint meeting of the Newcastle-on-Tyne section of the Society of Chemical Industry described the work being done at Skinningrove Iron Works, Yorkshire, England, to obtain industrial alcohol from the gas distilled from coal by a reaction of sulphuric acid on ethylene. Mr. Tidman recognized the difficulty arising from the slowness of the reaction and said that he believed it could be overcome, not as Fritzsche suggested, by pressure, but by a raise in temperature and by turbulence.

The alcohol obtained is not pure. Repeated distillations from 80 per cent alcohol left a residue which on cooling deposited a white crystalline solid which could be filtered off. On examination this solid proved to be diethylene disulphide. A yellow oil also was formed, but it was evident that it carried in solution no little of the solid just mentioned. Combustion of the oil showed about 15 per cent sulphur.

On trial it was found that a 700-lb. 4-hp. Triumph motorcycle made, with an 87 per cent alcohol, 58 miles per gallon. With No. 1 shell petrol it made 64.6 miles per gallon and with a half-and-half mixture of benzol and alcohol it traveled 78.5 miles per gallon. The sulphureted hydrogen in the coal gases not only forms diethylene disulphide, thus using up the ethylene that should be converted into alcohol, but it also causes a decomposition of the sulphuric acid. Furthermore an impure alcohol is produced. Obviously it is necessary to remove this sulphur. Bog iron ore is now being used, but in practice its price is, of course, prohibitory.

BLANKS SHOULD BE MEASURED; NOT LINES.—In describing the Mono instrument which registers the amount of combustible gases and the quantity of carbon dioxide in the gases from boiler furnaces, *Coal Age* stated on page 496 of the issue of March 17 that the lines ruled by the Mono represented the quantities of these gases, whereas they represent the amount by which those quantities are below 20 per cent. Hence it is the white section of the diagram that represents the quantity of combustible gas and carbon dioxide.



MOTOR STARTER DESIGNED FOR REMOTE CONTROL

It consists, as may be seen, of the necessary circuit breakers, switches, relays, fuses, instruments, etc., mounted on slate panels carried on a frame. Various capacities up to 300 kw. may be obtained, and, if desired, this equipment can be built for controlling two motor-generator sets in parallel.



Problems of Operating Men

Edited by
James T. Beard



Has the Certification Law Lost Its Value?

Numerous Letters Recently Received Bearing on the Certification of Mine Officials, Personnel of Examining Boards and Character of Examinations Makes This Question an Important One

WITHOUT doubt, mining men everywhere have been deeply interested in reading the letters that have appeared recently in *Coal Age*, bearing on different aspects of the certification law. Some of these letters seem to suggest a decline in the value of the examination and certification of mine officials.

Speaking from observation and experience in Pennsylvania, particularly in the anthracite field, it would seem that there is not the same practical value in the certification law now as formerly. Many things observed in respect to examining boards and the character and conduct of the examinations lend support to this belief.

Personally, I am inclined to think that it would be as well if the entire system of examination of candidates for official positions in mining was either changed, or the law wiped from the statute books. Certainly, something must be done to restore the value of the certificate in the minds of a large proportion of ambitious and competent miners, whose eyes are not closed to what is happening every day in this and in other states.

CERTIFICATE DISCREDITED BY EMPLOYERS WHEN HIRING MEN

To such an extent does this opinion prevail in the rank and file of our mine workers that the certificate has come to be regarded by them as a mere farce. It is not far from the truth to state that mine operators, managers and superintendents place little value on the fact that an applicant for position as mine foreman, assistant foreman or fireboss, has a certificate. It is asked and accepted by them largely as a form required by law.

Few superintendents of mines will take a man on the strength of his certificate. They make their own investigation of his character, worth and ability, and form their own judgment regarding his experience and competency, before giving him charge of a mine. It has been said that many regard the successful candidate in an examination more as an influential politician than a student of mining and having the necessary practical experience underground.

Reference was made in *Coal Age*, Jan. 27, p. 188, to the makeup of examining boards; and the saying was then quoted, "A man shall be tried by a jury of his own peers," which is a just and sound principle. Exception was taken by the same writer, that mine foremen and assistant foremen have not been appointed, or considered eligible for appointment, on examining boards for these positions.

PERSONNEL OF ENGINEERING BOARDS

It must be admitted that the examining boards for miners are the only boards that comply with the principle stated. The anthracite law makes that board to consist of nine miners, who are to be appointed by the judges, in each county. The boards to examine candidates for the position of mine inspector, are made to include, besides two mining engineers, three coal miners in actual practice. Likewise, the examining boards for mine foremen and assistant foremen, includes beside the mine inspector of the district and one operator or superintendent, two practical miners; but no mention is made of foremen or assistant foremen on this board.

When we consider the growing technical requirements in the operation of coal mines it seems almost absurd, if not laughable, to observe the extent to which miners are represented on these boards. One is lead to ask: How many of these miners are capable of judging of the qualifications of candidates for the office of mine inspector; and yet three-fifths of the Mine Inspectors Examining Board is made up of miners.

MINING LAWS NOT SPECIFIC

Coming down to brass tacks, as we say, our laws are not specific enough. For example, the requirement that a candidate for the office of mine inspector must have had "five years practical experience" in the mines should go further and explain the kind of work involved in that experience. The words "practical experience" are very broad and might refer to timbering, track-laying, or bossing; but might not include digging coal and examining mines for gas and other dangers.

In my opinion, no man is qualified for the position of state mine inspector, unless he has played the whole game from digging coal to having full charge of a mine. He must have climbed every round of the ladder before he can make a fit mine inspector. Instead of this explicit defining of the terms of the law's requirements, we observe a gradual letting down of the bars, in allowing the employment of "equally competent" men to fill the positions of mine foremen, assistant foremen and firebosses.

EFFECT ON AMBITIOUS MINERS

It is no wonder that hundreds of ambitious miners who are desirous of promotion will not take the examination under the prevailing conditions, which they regard as degrading. In April, 1920, some 22 candidates sat for three days, in the Courthouse at Wilkes-Barre, taking the examination for state mine inspectorship. There was much juggling and the examination was finally declared a farce. The candidates were, almost without exception, well versed in theoretical and practical mining, having served their time mining coal, firebossing and filling the positions of mine foremen and superintendents of mines.

Allow me to add, in closing, that the present Chief of the Department of Mines, Seward E. Button, is helpless; though recognizing these deficiencies he has no power to improve the conditions. The appointment of examining boards by county judges is open to the criticism of possible local favoritism. Why should not these appointments be made by the governor? ENGINEER.

Wilkes-Barre, Pa.

Discouragement to Mining Students

Holding a responsible position, in mining or any industry, demands both technical and practical knowledge. Many ambitious students of mining discouraged by the present Pennsylvania law.

SO MUCH has already been said on the subject of the certification of mine foremen that it would seem to be worn threadbare. There are, however, many important phases of the matter that can yet be discussed with profit as the letters thus far submitted by writers plainly show.

Close observation leads one to believe that there are many practical mine foremen holding their positions under service certificates. It is recognized

that they are unable to pass the technical portion of the examination required by an examining board; and yet they are known to be well qualified to handle men and produce coal though not, perhaps, on the same economical basis as a student of mining.

As yet, there are no available statistics to show that mine accidents are more frequent where uncertified men are in charge than where certified men are employed. At the same time, one naturally has some very definite ideas in regard to that matter. The safety-first principle should be our guide in respect to the employment of an uncertified man in a responsible official position. If we preach safety-first we must practice the same, or our preaching will be without effect.

CERTIFIED MEN HAVE ACQUIRED THE HABIT OF STUDY

Experience has lead me to believe that the man who has no certificate has not the same striving for knowledge that is manifest in the man who has studied to prepare himself for the examination and gotten his papers. If nothing more were gained than the acquiring of a study habit, the time spent in preparing for examination would not be lost.

In the mind of most operators, the production of coal is the first and uppermost thought. The question of the ability of the uncertified man to produce coal in the most economic way is often overlooked. A moment's thought, however, would reveal the fact that it is impossible for a man to get all this experience first-hand. Much of it must come by reading the experiences of others. The study habit acquired by a certified man makes him a constant reader, which enlarges his experience and renders him alive to the great problems that confront him in the mine.

One must admit that an uncertified man has not commonly the habit of reading what will be of practical benefit to him in the mine. He is not ordinarily a seeker after knowledge and a reader of such magazines as *Coal Age* and the publications of the Bureau of Mines, and other like sources of information on mining matters.

READING AND STUDY DEVELOPS EFFICIENT WORKERS

The cry of industry is for more efficient men, and it goes without saying that the man who studies and reads and applies the knowledge thus gained to the working out of his problems will prove the most efficient and valuable man to employ. Such men have a broader experience and are capable of doing more and better work; they profit by the experience of others. To say that a man has been engaged in the mining industry ten, twenty or thirty years does not mean that he is efficient by any means. There are plenty of men who have mined coal all their lives and are yet incapable of filling the position of mine foreman.

Let it not be understood that I am claiming that the simple passing of an

examination and securing a certificate will make a man efficient. That is but a feeble beginning and must be followed by continued reading and study. No amount of technical knowledge alone can make an efficient foreman; his makeup must be a combination of the technical and practical in mining. In other words, a foreman's technical knowledge must be so applied as to make his practical experience of increased value in dealing with the problems of mining.

THE STANDARD LOWERED

Believing, as I do, that there is an increasing need for technical knowledge in the operation of a mine, the later changes that have been made in the certification law, in Pennsylvania, has had the effect to lower the standard of qualification required of mine foremen and discouraged many students.

Under the old law, the certified man felt a greater responsibility resting on him. He felt bound to do only those things that, in his judgment, were safe; but this did not prevent him from giving his employer the best that was in him, while at the same time safeguarding the lives and property in his charge.

No one who is fair-minded and unprejudiced will deny that the present tendency, in all industries, is to raise the educational requirements of men who are to hold responsible positions, rather than to lower them.

DANIEL H. PURDUE.

Elkhorn, W. Va.

ANOTHER LETTER

FROM the letters that have appeared in *Coal Age* recently, I gather that there are other practical miners who feel about the same as I do in regard to studying and preparing oneself for taking the examination for mine foreman's papers.

Speaking candidly, there is little encouragement for any man to sit down in his spare hours and study mining books and problems, with a view to taking the examination for a certificate of competency. That used to be the only way in which a man could hope to secure a position as foreman or assistant foreman of a mine.

It is not so now. Under the new law, any miner can try for these positions whether he has the papers or not. All a man needs is to get a little backing and the position is his. It is a wonder to me that miners are still urged to buy books and study, in order to better their condition by qualifying themselves for higher positions.

Here in this district there are four or five mines running under the supervision of foremen and assistant foremen who have no papers. Some of these officials are not even citizens of the country. It is quite a common thing to see a fireboss made assistant foreman when the fact is well known that he has no papers for that position. These mines are putting out from 2,000 to 3,000 tons of coal a day. They are by no means small country banks, but shipping mines in full swing, which

should require able and competent foremen to be placed in charge.

In contrast with these conditions, there are men who have papers certifying to their competency to fill any of these positions and stand well recommended, and yet are turned down when they apply for the position, which is given to another of far less ability but having a stronger pull with the management of the mine.

Men have little inclination to study and fit themselves for these higher positions when they know that they have little chance of securing an appointment, except by wire pulling, to which many of them are strongly averse. Men who know their own ability to perform the work required generally prefer to rest their chances on the knowledge and experience they have gained, rather than on the efforts of friends exerted in their behalf.

It is no wonder to me that we read of instances where honest ambitious miners have refused the offer of a position as foreman or assistant foreman, knowing that they have no papers. In the minds of such men, to accept of the position under the circumstances, would degrade them in the eyes of others who would regard them in the light of being favored by the superintendent. I hope to see this question thrashed out so that all of us can get a square deal.

DISCOURAGED STUDENT.

Pittston, Pa.

Employment of Uncertified Men in Colorado

Mining laws should make suitable provision for the temporary employment of mine foremen, assistant foremen and firebosses, at times when it may be necessary to employ uncertified men, in these positions, subject to the same penalties as certified men.

THE discussion relating to the employment of uncertified men as mine foremen, assistant foreman or firebosses, in Pennsylvania, and whether or not they are liable to the same penalties as the law of that state imposes on certified men who fail in their duties is timely.

While I am not familiar with the Bituminous Mine Law of Pennsylvania, I can see nothing in those sections of the law that are quoted in *Coal Age*, Feb. 3, p. 234, that would cause an uncertified man any fear of punishment should he fail to perform his proper duty in the mine.

It seems to me that there must be some other references in the law imposing penalties for violation of its requirements. Without having the law before me, it would be hard to say whether a section, imposing a penalty for violations of the statute, would apply equally to certified and uncertified men who fail in their duties in the mines in which they are employed.

After the many years that have been spent in efforts to enact laws for the health and safety of men employed in mines, it would surprise me to know that a person who violates any provi-

sion of the law could not be punished in a suitable manner. If that is the case in Pennsylvania, I would say it is high time that the state law be amended and penalties imposed for violations on any underground worker.

In practically all of the important coal-mining states examining boards are appointed to ascertain the qualifications and fitness of candidates for positions of trust and responsibility in mines. Such qualifications and fitness, no doubt, could be determined as well by the company who employs the men; and if the work was well done they would be equally competent with men who have been certified to by a state examining board.

The fact that a man is certified by a state board and has his papers does not prove that he is competent or efficient. There are many instances that demonstrate the truth of this statement. On the other hand, there are miners who have no learning, and perhaps, can neither read nor write but who have made successful and efficient officials in charge of mines.

Nevertheless, the employment of a certified man gives greater assurance of safety. A man who has secured his certificate is generally careful not to do anything by which it might be taken from him. He values the possession of his papers, believing that they will be of some assistance to him in seeking employment in other mines where he may not be known. The chances are, however, that the superintendent or foreman to whom he applies for work will expect him to get on the job and prove what he is worth.

The laws of some states provide for the employment of uncertified men under certain conditions that are specified in the law. For example, the Colorado Coal Mining Law (Sec. 171) reads as follows:

From and after Jan. 1, 1914, it shall be unlawful for any owner of any mine to employ any coal-mine examiner, shotfirer, mine foreman, assistant mine foreman or fireboss, who does not possess a certificate of competency from the board of examiners, except as herein provided.

The last words, "except as herein provided," refer to Sec. 46, which reads as follows:

In case of the necessary temporary absence of the mine foreman, he may deputize any certificated person, if one be available, who shall for the time being perform all his duties. In case of the death or resignation of a mine foreman, the owner shall appoint a certified man if a suitable man be available and, if not, he may temporarily appoint any other competent man, but shall immediately notify the chief inspector, who shall assist him in securing a suitable man who has a certificate. If no suitable man can be found the temporary man may serve, with the approval of the chief or deputy inspector of the district, until the next examination.

In case an uncertified person is employed, however, he is liable to the same penalties as a certified person acting in the same capacity, if found guilty of failure to fulfill the duties required by the law. This is evident from the reading of Sec. 172, which is as follows:

Any violation of any provision of this act shall be deemed a misdemeanor and shall be punished by a fine of not more than one thousand dollars, or by imprisonment for not more than one year in the county jail, or by both such fine and imprisonment. Each and every day's violation of any provision of this act shall be deemed a separate offense, and it shall be the duty of the chief inspector to institute proceedings in the proper courts in case of all such violations.

Many of our coal-mining laws are written in a way that is not clearly understood by the men, and they often think that certain acts are violations of the law when the same is provided for in another section. For example, Sec. 62 of the Colorado law authorizes the mine foreman to fix the hours for blasting, but in a way not to conflict with the provisions of the act. One such provision (Sec. 159) is that "where shotfirers are employed blasting shall commence one hour after the regular quitting time and after all employees, except shotfirers, are out of the mine."

Mining laws should be clearly written and should not leave to mine officials

the work of safeguarding operations in their charge, beyond what is specified in the law. Where this has been done, it has generally proven a failure. The law should give the uncertified man every chance to gain experience, but should demand his certification within a proper time when employed in an official capacity.

It is not my meaning that uncertified men can be employed as mine foremen, in mines generating gas. I believe that every fireboss should be a certified official. But, assistant foreman, coal inspectors, timbermen, bratticemen and others doing work on which the safety of the men depends, should be given time to gain their experience before getting their papers.

In a word, all matters pertaining to mine ventilation, gases, coal dust, shot-firing, installation of electrical equipment and other work requiring experience and technical training should demand certified men. I congratulate the correspondent who has drawn attention to this question.

ROBERT A. MARSHALL.

Farr, Col.

Inquiries Of General Interest

Selecting Frogs in Laying Mine Switches

Selecting the Right Number of Frogs, in Laying a Mine Switch, Is a Matter That Calls for the Good Judgment and Experience of the Trackman

ONE thing that has caused much trouble and annoyance in our mines is the derailment of cars on switches, and I want to ask for a good rule that will enable us to use the right kind of a frog in laying a mine switch. What should be the width of the frog, and what should be the length of the switch to give good results?

MINE FOREMAN.

Wake Forest, W. Va.

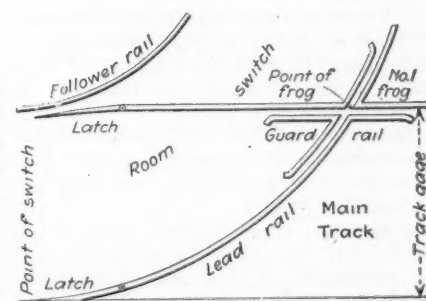
The size of a mine frog is designated by its number. A No.-1 frog is one that has a spread of one foot at a distance of a foot from its point. In other words, the ratio of the spread to the leg of the frog is 1:1. Similarly a No.-2 frog has a ratio of 1:2. That is to say, the spread of the rails is one-half their length. A No.-3 frog has a spread of one-third of its length.

The number of frogs to be selected will depend on the kind of switch employed, whether at a turnout where there is more room to lay the switch; or at the mouth of a room where the rails curve more sharply. Also, much will depend on the kind of haulage in use, whether mule or motor haulage, the size and weight of cars and speed of hauling.

While a No.-3 or No.-2 frog can be used on a turnout to best advantage,

it will often be necessary to use a No.-1 frog when laying a room switch on a narrow entry. The judgment and experience of the trackman must be such that he will be able to select the right frog for the right place.

Where gathering motors are used, a No.-2 frog should be laid on all room



A COMMON ROOM SWITCH

switches, in order to enable the locomotive to pass over the switch with ease. In mule haulage or where the cars are handled by hand, it will be possible to use a No.-1 frog in laying a room switch, as illustrated in the accompanying figure.

Having decided on the number of frog to use, the length of the lead-rail (which is the curved rail measured

from the point of switch to the point of frog) is found by multiplying the gage of the track, in feet, by twice the frog number. For example, using a No.-2 frog, in a track having a gage of 3 ft., the length of lead-rail, measured from the point of switch to the point of frog is $2 \times 2 \times 3 = 12$ ft.

The radius of the curve of the lead-rail is then found by multiplying the length of the rail by the frog number. Thus, in this case, the radius of curvature of the lead-rail is $2 \times 12 = 24$ ft.

Aside from selecting the right frog and laying the switch to the proper dimensions, much will depend on the ballasting of the track and the alignment of the rails on each side of the frog, both on the main track and on the switch. The lead-rail should have a slight elevation above the follower-rail, the latter being the inner rail of the curve. To avoid possible derailment, guard rails should be spiked to the ties opposite to the frog and the switch point.

Examination Questions Answered

Examination, Foremen and Assistant Foremen, Nineteenth Anthracite District

(Selected Questions)

QUESTION—What mines should be divided into districts? How shall each district be ventilated? What is the limit of persons in each split? How must intake and return airways be separated?

ANSWER—A mine employing more than 75 persons must be divided into two or more districts. Each district shall be ventilated by separate air splits. Not more than 75 persons can be employed, in the same current, at the same time. The intake and return airways must be separated by a pillar of coal or stone, except where crosscuts are needed.

QUESTION—What area of airways is required? What is the velocity limit required by law? Are there any exceptions to this limitation of velocity?

ANSWER—All the airways must have a sectional area sufficient to pass 200 cu.ft. of air per minute for each person employed therein. The velocity of the air current shall not exceed 450 ft. per min., in mines generating explosive gas and where locked safety lamps are in use. The only exception to this requirement of the law relates to main intake or outlet airways.

QUESTION—What part of abandoned mines shall be examined? By whom and how often? What is required if danger is found therein?

ANSWER—All accessible parts of a mine that have been abandoned must be examined, at least once a week, by the mine foreman or his assistant, and all danger found therein must be at once removed.

QUESTION—What stations must be established in a mine? What are their purposes?

ANSWER—A danger station must be established at the entrance to a mine or any section thereof, for the purpose of preventing anyone from entering that mine or section, until it has been examined and reported to be safe. The fireboss or some person authorized by him must remain at such stations to

see that no one is allowed to pass without permission of the fireboss.

QUESTION—When is the use of locked safety lamps compulsory? By whom are they furnished? Who cares for the lamps? Who may open locked safety lamps?

ANSWER—The anthracite law specifies that locked safety lamps shall be used exclusively when approaching a place liable to contain an accumulation of explosive gases, or where danger is imminent from gas. The lamps are furnished by and the property of the owner of the mine. A competent person is appointed to take care of the lamps, cleaning and filling them and delivering them to the men as they enter the mine. Each lamp is securely locked and none but a duly authorized person shall have in his possession a key or other contrivance for opening the lamp.

QUESTION—When may blasts be made where locked safety lamps are used? What examination must first be made and by whom?

ANSWER—Permission must first be given by the mine foreman or one of his assistants, before a blast can be fired where locked safety lamps are in use. The person in charge must first examine the place where a blast is to be fired, also the adjoining places; and satisfy himself that it is safe to fire the shot, before giving permission for it to be done.

QUESTION—Who must keep a working place safe and how? When may he not do or permit any work to be done?

ANSWER—The law provides that the person having charge of a working place in a mine shall keep the roof and sides of his place properly secured by timber or otherwise, so as to prevent slate or coal from falling. When the roof or sides of a place are loose or dangerous he shall not do any work in the place, except for the purpose of securing the same.

QUESTION—How do you measure air in a mine? What instruments are necessary? Assuming a velocity of 30,000 ft. per hr. in an airway 8 x 5 ft., what is the volume of air passing per minute?

ANSWER—First measure the average height and width of the airway with a tape. Multiplying these dimensions together gives the sectional area of the airway in square feet. Second, find the average velocity of the air current at that point, by exposing an anemometer for one minute to the current, at the same time moving the instrument about so as to obtain a fair average reading, which will be the velocity of the air, in feet per minute. Now, multiply the sectional area of the airway in square feet by the velocity of the air in feet per minute; the product will be the volume of air passing, in cubic feet per minute.

A velocity of 30,000 ft. per hour is $30,000 \div 60 = 500$ ft. per min. The sectional area of this airway is $8 \times 5 = 40$ sq.ft.; and the volume of air passing is, therefore, $500 \times 40 = 20,000$ cu.ft. per min.

QUESTION—What is the area of an air-course 7 x 8 ft.? What is its perimeter? If the air-course is 5,000 ft. long, what is the rubbing surface?

ANSWER—The sectional area of this airway is $7 \times 8 = 56$ sq.ft.; the perimeter is $2(7 + 8) = 30$ ft.; and the rubbing surface $30 \times 5,000 = 150,000$ sq.ft.

QUESTION—If there is 28,000 cu ft. of air per minute passing in an air-course 7 x 8 ft., in section, and 5,000 ft. long, what is the velocity of the air, and what pressure is producing the circulation?

ANSWER—The sectional area of this airway being 56 sq.ft., the velocity of the current when 28,000 cu.ft. of air is passing per minute is $28,000 \div 56 = 500$ ft. per min.

The pressure producing this circulation is $pa = ksv^2 = 0.00000002 \times 150,000 \times 500^2 = 750$ lb. This corresponds to a unit pressure of $750 \div 56 = 13.4$ lb. per sq.ft., or a water gage of 2.6 in., nearly.

QUESTION—If a fan making 50 r.p.m. gives a pressure of 4.5 lb. per sq.ft., what will be the pressure in the same airway if the speed of the fan is increased to 75 r.p.m.?

ANSWER—Roughly the volume of air in circulation increases with the speed of the fan and the pressure as the square of that speed. In this case, the speed ratio is $75/50 = 3/2 = 1.5$. That is to say, the volume of air will be approximately 1.5 times the original volume; and the unit pressure will then be $1.5^2 = 2.25$ times the original pressure; or $2.25 \times 4.5 = 10.1$ lb. per sq.ft.

In practice, however, this pressure is not realized under mining conditions. It is safer to estimate on the fourth power of the speed ratio being equal to the fifth power of the quantity ratio. This shows the volume ratio is 1.38 and the pressure ratio is then $1.38^5 = 1.92$, which makes the water gage resulting from the given increase in the speed of the fan $4.5 \times 1.92 = 8.6$ lb. per sq.ft.

Six Months' Strike in Alabama Practically Over When Contention Was Submitted to Governor Kilby

Union Expected Nothing from Decision but Used the Arbitration as a Means of Beclouding the Situation and Avoiding Responsibility—Unemployed Strikers Will Not Receive Union's Support Despite Recommendation of the Governor's Commission

BY SPECIAL CORRESPONDENT
Birmingham, Ala.

ONCE again the United Mine Workers of America have failed in their efforts to dominate the coal industry of Alabama. After a desperate struggle extending over a period of six months, marked by open and flagrant attempts to defy the laws of Alabama, and an unusual amount of bloodshed, the general strike in the Alabama coal fields called Sept. 1, 1920, by John L. Lewis, national president of the United Mine Workers, has ended in utter failure of the strikers to secure recognition of the union.

Under the terms of the award made by the Governor of Alabama, Thomas E. Kilby, under an agreement entered into Feb. 22, 1921, the union not only lost its fight for recognition, the only point involved at the beginning, but all other points raised in the brief which the strikers submitted to the Governor. The strike was officially called off Feb. 22, and the award of the Governor was announced March 19.

The result of the strike was a sad blow to the members of the miners' union, who were assured by International Representative Van Bittner, when the strike was called, that it would never end until the operators had recognized the union, and that not only was the full force of the United Mine Workers of America behind the Alabama strikers but that the "war chest" that was asserted to aggregate \$20,000,000 was at the disposal of those in charge of the Alabama fight.

GOVERNOR INVESTED WITH POWER OF SETTLEMENT

The agreement to clothe the Governor with full power to settle the strike as he saw fit was negotiated by local citizens and it provided that the union officials would officially call off the strike and that the Governor would withdraw the state troops.

The agreement was not made until many weeks after the mines had received an excess of skilled labor and had been forced to decline daily to refuse work to hundreds of men who sought positions in the mines. For weeks the coal production of Alabama had exceeded the average of several years past, and the operators had reached the point where they were able to run only three or four days each week because the daily output was too large to permit of steady operation.

The operators had just won all the detainer suits they had instituted for the possession of their houses. In many cases the strikers had managed for months to continue their tenancies by appeals to higher courts and by the giving of bonds for twice the amount of the rent, court costs and penalties, but by the time the case was submitted to the Governor the courts had restored to the operators their rights to the use of their houses.

BEATEN, THEY SOUGHT TO SAVE THEIR FACES

The strike leaders had bitterly arraigned the Governor because of his firm stand for law and order, and their willingness to leave the settlement in his hands is thought to have been due to a recognition that they were completely and hopelessly defeated and to the further fact that the national organization had given notice that the "war chest" would soon cease to pour out its prodigal flow of gold in a fight long since lost.

The findings of Governor Kilby were based upon an exhaustive report made by three personal representatives appointed by him to ascertain the true facts regarding the

situation in the Alabama coal fields. The personnel of this committee was praised throughout the state for its ability and fairness. All the members were from Montgomery, in central Alabama, far removed from the feeling and animosity of the strike zone. William T. Sheehan, editor of the *Montgomery Advertiser*; Richard M. Hobbie, wholesale merchant and Food Administrator for Alabama during the war, and John W. Durr, wholesale druggist, comprised this committee, which made a thorough investigation of all phases of the situation and submitted an exhaustive report containing the briefs filed by both sides, a transcript of all oral testimony and countless exhibits of various kinds.

EVERY CLAIM MINE WORKERS URGED IS DENIED

The summary of the Governor's findings follows: "It is found and I so declare: (1) Recognition of the United Mine Workers of America is not to be compelled. (2) The day-wage scale and sub-contract system are to remain unchanged. (3) The existing methods of adjusting grievances are found to be fair and equitable. (4) The operators are under no obligation to re-employ the striking miners. (5) The freedom of contracts shall be inviolate and therefore any of the above-mentioned things may be done by mutual agreement of the parties.

"And I recommend: (a) That the operators to promote peace and harmony re-employ the men who struck and are still unemployed. This should be done as fast as places can be found for them, without, however, displacing men who are now at work. (b) That until they can find employment the organization of the United Mine Workers of America support these men.

"Compliance with these recommendations would be a gracious act on the part of the operators, tending to refute the charge of selfishness so often made against them, the truth of which has been indicated by the way in which some of them profited during the strike. It would be an act of simple justice for the United Mine Workers of America to support these unemployed men and it would tend to disprove the assertion and belief of many people that the organization exists mainly to serve the selfish purposes of its officers, organizers and representatives."

FEIGNING SURPRISE, GOT WHAT THEY EXPECTED

Although the officials of the miners' union, before they allowed the Governor to settle the matter, realized that the strikers had been decisively defeated, and though they knew that there was nothing left to arbitrate, they expressed great surprise and anger at the award of the chief executive. As men were so plentiful that it was hard for the operators to provide enough work to keep them busy even part of the time, the union could not do otherwise than agree to comply with its written promise to abide by the award. Nevertheless, a formal statement was issued that the union would accept the result. It was announced, however, on March 26, that the strikers would not be fed and no more money would be paid them after the week ending April 9. However, the national officers did kindly agree to allow the strikers to remain in the tents they occupied until they could make other arrangements.

Except for the presence of the state troops, made necessary by murders and ambushes of non-union men, and dyna-

miting of non-union men's homes, there was nothing to remind the public or the operators that a strike was in progress. The troops were called out two weeks after the strike started, when the general manager and chief deputy of one mine were murdered, and a number of non-union miners ambushed. Due to incendiary meetings and official orders from union officials for the strikers to picket and intimidate men at work, which are direct violations of the laws of Alabama, it was found necessary to maintain the troops on duty until the strike was officially called off.

Despite the bitter denunciations by strike leaders because of his firm stand for law and order, the Governor informed union officials that the troops would be maintained in the field until the strike was officially declared off.

STRIKE COST STATE \$100,000 PER MONTH

Even though the cost was more than \$100,000 per month and was wiping out the surplus which Governor Kilby had created through his wise and efficient management of the state's affairs, and although the union leaders boasted that they would bankrupt the state before they would end the strike, the Governor could not be deterred from his stand.

Efforts of strike leaders to arouse the taxpayers and force withdrawal of the troops acted as a boomerang and tended to make the taxpayers better satisfied with the tax-adjustment system inaugurated by the Governor, even though it increased the assessments of many property owners.

In discussing the causes of the strike and the record of the United Mine Workers of America Governor Kilby said in his report: "This strike, being called neither with just cause nor for the purpose of remedying any grievance and in deliberate violation of an agreement, was illegal and immoral. It proves beyond cavil that the written contract or obligation of the United Mine Workers of America cannot be relied on and that recognition would give no assurance of industrial peace. It is rather difficult to understand how such a large number of men could be induced so deliberately to disregard such an obligation of honor. The only explanation, perhaps, lies in the fact that from 70 per cent to 80 per cent of the miners are negroes.

"The Southern negro is easily misled, especially when given a prominent and official place in an organization in which both races are members. Negroes from other sections were imported into the state for the purpose of influencing and directing the negro miners. The negro miners were undoubtedly deceived and led into this violation of their agreement by leaders from other sections. Mr. Bittner well says in his brief, 'The essence of success in collective bargaining lies in the fidelity of both sides to the agreement,' thereby announcing a truth which seems to have been entirely forgotten or ignored by the organization of which he is chief representative."

The Governor declared that in making his decision he constantly kept the welfare of the public in mind, as the people are the innocent sufferers in all industrial disputes.

COMMISSION'S REPORT BASIS OF DECISION

In reaching his decision the Governor gave careful attention not only to the report of his second committee of three personal representatives but also to that of the first coal commission which he appointed early in the struggle to ascertain on his behalf the true facts of the case. This earlier commission consisted of Dr. George H. Denny, president of the University of Alabama, chairman; former Governor Charles Henderson and Judge James J. Mayfield of the Supreme Court. The report of both bodies coincided in all major points at issue.

Those in the confidence of the strike leaders declare that while they demanded many things in the arbitration, they had little hope of gaining their contention. The following were the demands as submitted by Van A. Bittner, chief representative of the United Mine Workers of America; none of them was allowed by the award: (1) Recognition of the union; (2) abolition of the sub-contract system; (3) re-employment of the striking miners; (4) readjustment of the day-wage rate; (5) setting up of machinery to adjust industrial disputes and avoid future strikes.

The attitude of perfect frankness toward the public which the operators maintained throughout the long struggle caused public sentiment to favor the operators from the start. The operators in their advertising and publicity faced each issue squarely as it arose. Even when the mine workers tried to inject the high price of coal as an issue the charge reacted in favor of the operators, for the leading producers of coal opened their books and gave all facts regarding cost and selling price to the public. The operators relied upon frankness and fairness in their publicity rather than on any attempt to withhold facts from the public.

On the other hand, the union officials were exceptionally adroit and relied upon half facts or misstatements in an effort to prejudice the public against the operators. Their appeals to class prejudice failed of their object and their half truths and deliberate misstatements were promptly refuted by the straightforward statements of the operators.

Judge McGee Urges Northwest to Place Winter Coal Orders Early

JUDGE MCGEE, former Fuel Administrator for Minnesota, has given out an interview in the Twin Cities stating that the Northwest is in danger of a serious coal shortage this coming year unless orders for coal are sent in immediately for stocking the docks with as much coal as possible. He refers to a letter from Daniel Willard, of the Baltimore & Ohio, stating that the people of the Northwest are simply drifting into the same situation as a year ago. Mr. Willard says they cannot count upon a mild winter to help them out such as we have had this year. Mr. Willard asserts that the railroads simply cannot deliver within a few months all the coal needed for the winter, and if they are not given aid by distributing the coal deliveries through the season there will be a serious shortage.

Says Placing Contracts at Present Spot Prices Would Mean Receivers for Operators

A WARNING that the public is facing a coal situation similar to that of 1920 was sounded by P. H. Penna, secretary-treasurer of the Indiana Bituminous Coal Operators' Association, in an interview recently.

Mr. Penna was asked why the operators do not contract their coal at the spot prices now prevailing.

His reply is very much to the point. "To do so would put them in the hands of a receiver," he said. "While they find it necessary to take big losses on spot coal, they necessarily have to look forward to the time when they can take a profit, and that profit has to be sufficient to absorb the losses of the dull seasons. Coal mining, unfortunately, is a seasonable business. Periods of unusual demand and high prices are followed by periods of little or no demand and at ruinously low prices. This is true because the ordinary consumer will not buy coal except when he absolutely has to have it."

Receipts of Coal in New England

[As reported by the Fuel Administration for New England; E. F. O'Dowd, Statistician]

Statistician

ANTHRACITE AND BITUMINOUS					
Calendar Year	Tide and Rail, Tons	Tide, Tons	Rail, Tons	Percentage	
				By Tide	By Rail
1916	34,837,000	19,421,000	15,416,000	56	44
1917	35,184,000	17,114,000	18,070,000	49	51
1918	40,792,000	20,174,000	20,618,000	49	51
1919	28,760,000	11,837,000	16,923,000	41	59
1920	33,689,000	13,732,000	19,957,000	41	59
ANTHRACITE					
1916	10,715,000	5,228,000	5,487,000	49	51
1917	11,680,000	4,421,000	7,259,000	38	62
1918	13,621,000	4,117,000	9,504,000	30	70
1919	10,578,000	3,310,000	7,268,000	31	69
1920	11,255,000	3,521,000	7,734,000	31	69
BITUMINOUS					
1916	24,122,000	14,193,000	9,929,000	59	41
1917	23,504,000	12,693,000	10,811,000	54	46
1918	27,171,000	16,057,000	11,114,000	59	41
1919	18,182,000	8,527,000	9,655,000	47	53
1920	22,434,000	10,211,000	12,223,000	46	54

The Weather Vane of Industry

News Notes Chronicling the Trend of Industrial Activities on Which Depends the Immediate and Future Market for Coal

GENERALLY speaking, business sentiment shows an improvement over the earlier months of the year, according to a review of business conditions as of April 1 by the Mechanics & Metals National Bank of New York City, and in a number of directions tangible improvement in operations is shown, in spite of difficulties. "Difficulties confront the United States at this time," the review continues, "but, serious as they are, they shrink in importance when compared with the difficulties of other countries of the world. Relatively, we are an exceedingly favored people, who have gone through a period of such severity that, had we not been granted inherent financial strength, capable business leadership, and a banking and credit mechanism that functioned with remarkable precision, we would have suffered severe consequences."

"Deflation has of course been painful; but it has been orderly, and up to the present has carried us a very long way from the exaggerated and fictitious prosperity of last year toward real stability. How much further it is to proceed in the immediate future is still to be determined. The current movement of prices is not a criterion on which we can safely count; having suffered an extreme decline in certain commodities, prices are being arbitrarily maintained in certain other commodities—notably steel—and the broad indication of price movements is, therefore, partly concealed."

"It is properly said that the world cannot sit helpless because the machinery of its own civilization has ceased properly to function. If the world's commerce is to go on and expand, distribution must be restored. People anxious to work must be freed from obstructions imposed by their temporary inability to pay for raw materials, and nations surfeited with raw materials must likewise be freed from the obstructions that prevent them from selling those materials to countries which need them."

Durant Buys L. I. Assembly Plant

W. C. Durant has acquired an eight-story and basement building in Long Island City at a cost of \$2,000,000. The building will be used by the Durant Motor Co. of New York, the first of a chain of independently organized assembly plants to be located at strategic distributing points. Durant Motors will supervise and direct production.

Automobile Factories Speed Up

Automobile manufacturers in the Detroit district report a steadily increasing demand for private cars, trucks and other types of motor driven vehicles. According to the statistics of the manufacturers, the greater number of the cars are being sold either in the East or the extreme West, with the business boom at its height on the Pacific coast. The export trade is also advancing. Both the Dodge and the Ford plants are working 60 per cent. normal as

against 10 per cent. last fall, while a number of the plants where more expensive cars are made are doing practically as well.

Between 6,000 and 7,000 men will be re-employed by the Willys-Overland Co.'s Toledo plant during April, according to an announcement made March 29 by Vice President Charles B. Wilson.

Henry Ford Now to Make Plate Glass

Henry Ford's new factory at Rockford, Mich., will begin the manufacture of plate glass within a few weeks. Equipment is on its way from the Highland Park plant, where it was made, and engineers are preparing to set it up quickly. Chemists recently made a survey of the silica deposits in the vicinity and reported them particularly suitable for making glass for Ford cars. Mr. Ford's engineers say they have a new method of making plate glass which is cheaper than ever before known.

Tire Business Gains Steadily

Improvement in the automobile industry, reported in Detroit, is reflected in the tire industry in the Akron manufacturing district. Increase in sales to manufacturers of about 70 per cent for April over March and a decided jump in dealers' business have resulted in the Goodyear Tire & Rubber Co. announcing an increase in production amounting to 33 per cent. This company will turn out 16,000 casings and 16,000 tubes a day in April as against 12,000 casings and 13,000 tubes in March. The new production is one-half of the peak reached a year ago. Twelve hundred former Goodyear employees who are living in Akron returned to work this week. The American Rubber & Tire Co., a small Akron concern, has resumed three eight-hour shifts to fill tire orders. Other tire factories also are increasing production.

Eight Mills Start Operations

Eight sheet mills at the plant of the Whitaker Glossner Company, Portsmouth, Ohio, resumed April 3. The mills have been idle for several months. The resumption gave employment to approximately 750 men.

Will Enlarge Portland Terminal

The Grand Trunk Railway steamship terminus at Portland, Me., will be enlarged and improved at a cost of approximately \$500,000, officials of the railway said March 29. Construction will begin May 1.

Youngstown Plants Resume

For the first time in many weeks increased operations for independent steel plants of the Youngstown (Ohio) district were announced last week. Ten sheet mills resumed operations in various plants.

Tinplate Works Start Up

The Standard Tinplate Works, at Canonsburg, Pa., will resume operations April 11, according to notices posted by the company last week. The plant closed March 5.

Copper Plants Cease Production

Stagnation in the copper business and inability of the big producers to finance foreign sales of the metal are responsible for the shutdown of practically all of the leading companies. The Anaconda Copper Mining Co., the Utah Copper Co., Ray Consolidated Copper, the Chino Copper Co. and the Nevada Consolidated Copper Co. announced complete closing of their properties March 29.

Sheet Mills to Reopen

The Martin's Ferry (Ohio) Sheet Mills of the Wheeling Steel Corporation will resume operations April 14, company officials announced recently.

Committee Warns New Yorkers to Purchase Winter Coal in Spring and Summer

THE importance of making provision during the spring and summer months for coal requirements for the winter in order to avoid the unpleasant experiences of recent years because of coal shortage is emphasized in a statement made on behalf of the joint committee composed of representatives of real estate interests, which includes the Real Estate Board of New York, New York Building Managers and Owners Association; and the Advisory Council of Real Estate Interests, and also the Board of Health.

The statement, which is issued by Edward P. Doyle, the Real Estate Board's representative and chairman of the committee, contains definite proposals for avoiding the mistakes and inconvenience of the winter of 1919-1920, escaped this winter only because of the extreme mildness of the weather. Mr. Doyle says:

"The only way to prevent the annual recurring coal shortage in Greater New York, with its famine prices, is by the purchase and storage of the winter supply of coal during the spring and summer months. This is the conclusion of our committee after six months of investigation. On Nov. 1, 1920, only 2,100,000 tons of Greater New York's yearly allotment of 11,000,000 tons of anthracite had been delivered, and the majority of this tonnage was of commercial size anthracite; not domestic size. The only thing that saved the people of this city from untold suffering, and its commercial interests from a partial shutdown was the unprecedentedly mild winter. It was not until Dec. 15 that the crisis had passed and the city was assured of a supply sufficient to take care of temporary needs.

"This result was due to a great extent to extraordinary efforts on the part of the Joint Committee on Coal for New York and Senator Calder's committee. The greatest indifference as to New York City's necessities was shown by the anthracite producers and distributors, although they were told the consequences of a great population suffering from cold. Such a condition should never occur again and the joint committee is resolved to prevent, by an appeal to public opinion, its recurrence.

URGED TO ADAPT GRATES TO COMMERCIAL SIZE COAL

"The owners of buildings have been asked to change their grate bars so that their furnaces can use commercial size coal instead of domestic size. Dealers have been asked to increase their storage capacity and to make contracts for certain delivery in April, May, June and July. The Interstate Commerce Commission has been asked to urge a lowering of transportation rates during a period when transportation is least difficult and the railroads least employed, and the anthracite producers have been asked to make lower prices for the four months named to encourage coal purchasing.

"Favorable responses have been received from all interests affected except the most important interest of all—the anthracite producers' association. This association asserts that it will not be practicable to reduce prices because of the increasing demand and lowered production. Unless there is strong pressure from the public and from Congress no inducement will be offered for spring purchasing. As the present retail price of anthracite is uneconomic and really beyond the ability of the ordinary customer to pay, there will be no spring buying, and there will be another shortage when necessity forces buying at a sacrifice.

"No sane business man wants government regulation, but the attitude of the anthracite producers may force some form of regulation of this monopoly. Senator Calder very truly says that coal is an absolute public necessity and is the basis of all industry. It is essential also to living in modern communities. New York City without light or heat would be impossible. Last winter the great gas and transportation companies were frequently within a few days of cessation of activities. No government could exist that would tolerate a continuation of last winter's situation.

"The committee records with great pleasure an entirely favorable communication from the bituminous producers. Their association offers to co-operate in every way, and their prices are sufficiently low to stimulate spring and sum-

mer buying. This will help wonderfully the gas and transportation companies, but soft coal is not used for domestic purposes and cannot legally be used for manufacturing purposes in Greater New York on account of the smoke nuisance. It is hoped that sufficient pressure will be brought to bear on the anthracite producers to force a change in their attitude."

With Land Purchases Steel Corporation Increases Output of Coal and Coke

DURING 1920 the coal mines of the United States Steel Corporation produced 30,828,334 tons of coal, as compared with 28,893,123 tons in 1919, an increase of 1,935,211 tons, or 6.7 per cent, says the annual report of the corporation. There was manufactured 16,208,111 tons of coke, as against 15,463,649 tons in 1919, an increase of 744,462 tons, or 4.8 per cent. Of the coal mined 24,384,925 tons was used in the manufacture of coke, and the remainder was used for steam, gas and all other purposes.

There were expended on the coal and coke properties of the corporation and the subsidiary companies for the acquisition of additional properties, extension and construction, and net stripping and development expenses at mines \$18,905,383. Of this, \$11,517,149 was for the purchase of additional acreage of steam coal and surface property, the greater part of which is located in Greene County, Pennsylvania. These purchases of coal land added to the coal property acquired during the past four years by the subsidiary companies place them in a position where, as soon as the properties can be opened, they will be self-contained and on basis of a low cost price in obtaining their requirements of steam coal, the major portion of which they have always been obliged to purchase from outside coal operators, says the report.

The employees of the coal and coke properties during 1920 numbered 25,889, an increase of 1.294 over 1919, while the employees in all the companies of the corporation numbered 267,345, as against 252,106 in 1919. The average salary or wage per employee per day of the corporation was \$7, as compared with \$6.17 in 1919, an increase of 83c. or 13.45 per cent, but, says Chairman E. H. Gary in his report, because of advances in wage rates at different times during the year and affecting different groups of employees, the \$7 average does not fully indicate the average pay at the close of the year. For the month of October the average rate was \$7.23 per day and for the month of December \$7.19 per day.

There was expended for safety work \$1,420,456, as compared with \$1,143,534 in 1919. The number of serious and fatal accidents in 1920 per 100 employees was 13.29 per cent less than in 1919 and 53.89 per cent less than in 1906.

Disbursements made by subsidiary companies during the year for work accidents, including accruals not yet actually payable under state compensation laws, was \$5,634,263, of which 87.6 per cent was paid or is payable directly to injured employees or their families. To provide prompt and adequate treatment for employees in case of accidents the subsidiary companies have built and are maintaining 298 emergency stations and 25 base hospitals, with a staff of 263 surgeons and physicians whose entire time is given to company work, also 91 outside surgeons retained on salaries, and all without any charges to employees. There also are being conducted sixty-two stations for training employees in first-aid and rescue work.

The Northern coal and coke property of the corporation consists of 251,055 acres of coking coal and 154,423 acres of steam and gas coal. It owns 66 coke plants, 20,427 beehive ovens, 2,558 byproduct ovens and 32 coal plants not connected with coke plants.

The Southern coal and coke property consists of 196,678 acres of mineral interests and surface, 149,382 acres of mineral interests only and 16,265 acres of surface only. On the developed sections of this property there are 9 coal-mining plants comprising 15 operating mines, and in connection with these operations there are 7 coal washing plants and 7 coking plants, the latter comprising a total of 2,974 beehive coke ovens. At Fairfield, Ala., there is located a byproduct coke works consisting of 434 ovens.

Seek Reconsignment Changes to Utilize Fully Transportation Facilities

NO REPORT has been made as yet to the Traffic Executive Committee of the American Railroad Association as to the proposed changes in diversion and reconsignment rules. The matter now is being considered jointly by the Trunk Line Coal and Coke Committee, Central Territory Coal and Coke Committee, Indiana Coal Committee and the Illinois Coal Committee. If these committees recommend changes in the rules as asked by the coal operators and the wholesalers, the changes will have to be approved by the Traffic Executive Committee. If approved by that body, they then will go to the Interstate Commerce Commission for review.

In presenting the case for the operators to the committees, John Callahan, traffic manager for the National Coal Association, stated that he is interested in having continued every beneficial transportation practice which grew out of war experience. He made it clear that he is not asking a reduction in reconsignment charges or authority for additional reconsignments. The operators, he said, are interested in the maximum utilization of all transportation facilities, and for that reason they ask only that the existing rules be changed so that in lieu of the two local rates which now are applied on a reconsignment the through rate shall apply from the point of origin to the reconsigned destination when a through rate exists.

The wholesalers made a number of suggestions which in effect would result in much more liberal arrangements as to reconsignments. It is said that their proposal would allow some free reconsignments. The wholesalers' suggestions went further than those of the operators in that they would affect reconsignment within switching limits before placement. Their suggestions also involve reconsignment before the car reaches the original billing point.

Bellaire Mine Workers Want Less Work

AT THE twenty-third annual convention of subdistrict No. 5 of the United Mine Workers of America, which was held at Bellaire during the second week of March, action was taken on a number of important matters, the convention being in session nearly the entire week. The subdistrict is known more generally as eastern Ohio.

One resolution introduced late in the week condemned local strikes. It is hoped that, as the resolution was duly approved, spasmodic strikes for every cause and no cause will trouble the eastern Ohio region less than in the past. The committee on "officers' reports," in its statement to the convention, recommended that in future subdistrict officers should not assist in the settlement of disputes unless they have been previously notified that the mine workers of the local meditated striking, nor shall they attempt mediation when the strike is for some concession for which the contract between mine workers and operators does not provide.

A resolution for a six-hour day was introduced, but this being regarded as a question of wage scale it was not considered but left for introduction at the next annual convention, when the scale will be the main matter for determination. Resolutions seeking to restrict the number of tons a miner might produce and demanding pay for all stone removed shared the same fate as the one providing for a six-hour day.

As a means of meeting the present shortage of houses a resolution was introduced requesting that the state erect homes for miners and permit the miners to pay for them on the installment plan. This resolution had the endorsement of President Roy. When a resolution was presented signed by locals in the northern end of the Panhandle of West Virginia asking for representation on the executive board of subdistrict 5, the discussion led up to a declaration in favor of a movement to unionize all the mines in the Panhandle region.

The convention by a vote of 68 to 29 abolished its permanent legal department, which was said to be costing the organization about \$16,000 yearly without affording the

mine workers the protection to which they believe themselves entitled. The delegates declared that the mine workers were called upon to pay fees in addition to the assessments which were levied for the support of the legal department. A special committee had recommended that the legal department be retained, but its advice did not appear good to the delegates and they voted to economize by abolishing the department.

C. B. Wynkoop Sees Indications of a Return of Runaway Coal Market

DISCUSSING the trade in general, C. B. Wynkoop, of the Cosgrove-Wynkoop Coal Co., said:

"The coal trade seems to be going through a weeding-out process which will undoubtedly continue for some little time, when it is to be hoped that the trade will find itself on a much firmer basis. The past four years have been filled with many difficulties in the way of mining and shipping, causing high prices, low quality and general dissatisfaction.

"The trade has also been unfortunate in having a great many 'snowbirds' in the business—men who are not in the regular trade but persons who get into the business at times when profits are very high and quality is not demanded. One type of 'snowbird' who was responsible to a very great degree for the high prices during the past year was the broken-down lawyer, preacher, bookkeeper, or what not, who called on the consumer, offering him anything in the line of coal that was required, without actually having any coal to sell, and then made his purchases at fancy prices from one of the 'snowbird' operators or wagon loaders.



C. B. WYNKOOP

"These chaps for the most part were mining coal that in normal times cannot be taken out on account of its poor quality and the excessive cost of production. Since Dec. 1 these men have been dropping out very fast, and will continue to stay out if the consumer will remember his lesson in regard to keeping his storage pile well stocked, instead of waiting until the last minute, as has been his custom in the past.

"There are many indications that 1921 will be a repetition of 1919. The railroads and consumers have all stopped buying, consequently they can all be expected to come to the end of their respective coal piles at about the same time, which probably will cause another runaway market, with the reappearance of the 'snowbirds' and the consequent high prices resulting from consumers bidding against each other in the producing fields.

"The legitimate coal trade is for the most part under contract at low prices with regular customers, but it comes in for the blame for car shortage, high prices and poor quality of coal. As a matter of fact this blame rests almost entirely with the consumer. If the consumer would be consistent in keeping his stock pile at a certain point throughout the year, regardless of the amount he is consuming, he would never be called upon to pay exorbitant prices in order to keep his plant running, and the 'snowbirds' would disappear entirely, with the result that the legitimate oper-

ators would enjoy a much better car supply and better and more efficient labor, and prices would remain stable.

"Production of manufactured goods of all kinds must return to something near normal during the year 1921. It is also to be hoped that the many problems affecting our export trade, such as the tariff and exchange, will be adjusted early in the year, as it would seem from reports that legislation covering these items should be enacted shortly after the new Congress convenes.

"If the manufacturer and consumer will take the various questions under consideration as related to their own business, and make their purchases of coal accordingly, it will not only benefit them but the coal trade. Runaway markets, high prices and inferior quality, which invariably go together, are poor return for any business, and can be avoided with the proper kind of buying."

Dominion Coal Co. Collieries in Cape Breton Close; 10,000 Men Idle

ALL of the twenty-five collieries of the Dominion Coal Co. in Cape Breton were closed down on March 19 following a statement from President Wolvin that the local coal market was much depressed. Traffic on the Sydney & Louisburg Ry., a subsidiary of the Dominion Coal Co., has been almost discontinued for lack of freight.

It was believed that some of the mines would be reopened the following week but most of them are likely to remain closed for an indefinite time. In the meantime about 10,000 men, including miners, railroad employees and others dependent upon the coal mining industry, are out of employment.

On March 22 seven collieries of the Dominion company resumed operations. The remainder of the company's mines were still idle, but it was hoped that they would be operating the following day so as to make an equal division of available work among the miners of the district. The output March 22 was 6,100 tons, about half the normal quantity.

Production Declines in Germany as a Result of Eight-Hour Day

THOUGH affected to some degree by conditions peculiar to continental Europe as an effect of the war, a test of the eight-hour day in Germany has in the main proved pretty much the same as in other parts of the world. Not only has gross production fallen but the actual hourly production has suffered a decline. Neither of these results is in accord with the claims usually presented by proponents of shorter working hours.

The facts are presented by the National Industrial Conference Board, whose correspondent in Germany has forwarded a report on the workings of the eight-hour day established by law in November, 1918. He admits that it is impossible to speak with exactness, and calls attention to the fact that this problem of working hours is affected by political considerations. His main conclusions may be stated thus:

Since the introduction of the eight-hour day production in industrial occupations has declined. In no instance has the daily production been so great as under the nine-hour day. Hourly production has decreased, but this is partly due to the lack of desire to work, common in all countries affected by the war.

Total production in 1920 was greater than in 1919, and output will probably increase when it becomes more certain that a final peace is concluded. Even under the best conditions it does not seem likely that production will equal that under the nine-hour system.

Demands on German industries are not as great as before the war, and this has brought a demand for the shorter workday (and perhaps accentuated the slowing down of the individual workman), so that such employment as exists may be divided among all workmen. For many reasons, including political, no change in the direction of longer hours is likely in the near future.

Advocates Government Control of Coal as Reprisal for Prohibition

REPRESENTATIVE SCHALL, of Minnesota, says the new Congress must take up the question of coal regulation. His idea is that production, distribution and prices should be governed, allowing a fair profit for the operator. He cites the way they do it in England as a superior method, blithely ignoring the fact that there is no government control in that country, such control having been relinquished.

Mr. Schall makes the point that employers of large masses of labor, like coal producers and steel manufacturers, cannot logically object to government regulation of their business, as these men were instrumental in enacting the prohibition laws for the regulation of their employees' personal habits.

His views on coal exports are interesting. He said that there have been tremendous profits made on export coal, and that the dealers have hidden the effects of export shipments on the domestic situation. Profiteering on export business was comparatively safe, he said, so foreign orders got the preference and the domestic market was neglected.

It seems that Mr. Schall's views on coal exports do not exactly agree with those of Secretary Hoover, of the Department of Commerce. Mr. Hoover recently said that coal exports were included in his plans for building up a general foreign trade for this country. He is scheduled to have conferences with chambers of commerce with a view to forming committees whose efforts to increase exports will be co-ordinated, and as a larger part of the world's carrying trade is desired, exports of coal will be a special care of these committees.

Mine Bureaus of United States and Canada To Co-operate in Lignite Research

AN EXCHANGE of information as to lignite research between the national agencies of Canada and the United States is the outcome of a conference between officials of the Canadian Department of Mines and Director Bain, of the U. S. Bureau of Mines. Dr. Bain states that the Canadian officials welcome this effort to prevent useless duplication of work. They acquainted Dr. Bain with the results which they have attained. Dr. Bain found that their work has progressed considerably further than has any lignite work done in this country. W. W. Odell, of the Bureau of Mines staff, has been sent to Canada to make a more detailed study of Canadian results.

The Canadians have made retort studies on a large scale. As a result of the data on the performance of those studies, a large plant has been built in Saskatchewan in which operation will begin in May and Dr. Bain has made arrangements so that the Bureau of Mines may station an engineer observer at the new plant. The Bureau of Mines expects to begin experiments early in July at the lignite plant owned by the State of North Dakota, where the Canadians in turn will send one of their engineers to make observations.

The studies made thus far, both in Canada and in this country, indicate that it is better to concentrate first on the development of a high-grade fuel rather than go into the highly ramified effort of saving the byproducts.

WHO PROFITS BY INSTALLING NEW MACHINES?—There has been no agreement so far between the operators and miners of northern West Virginia as to the rate to be paid to those mining and loading coal where arc-wall cutting machines are used. The miners insist that a part of the increased pay should be given the loaders. This question has been allowed to rest for a while, but it is now understood that an agreement of some kind be reached in the near future.

A RECENT ISSUE OF *Coal Age* gave the output of Alberta mines as 6,650,000 tons in 1920, whereas the actual output was 6,908,923 tons, which is nearly 2,000,000 tons greater than the output for 1919 and constitutes a record production for the province.

Daugherty Enjoined in Conspiracy Case; National Coal Association Denies Collusion in Priority Orders

BY PAUL WOOTON
Washington Correspondent

IN obtaining a temporary restraining order against Attorney General Daugherty and his subordinates, in the Supreme Court of the District of Columbia, a point of great significance has been scored by the National Coal Association in connection with the indictments drawn in the U. S. District Court at Indianapolis against ninety-nine coal-producing corporations and 127 individuals. This step, it is believed, will force the prosecution to show its hand and explain, among other things, why it is attacking as illegal agreements made with the expressed approval of government officials.

The bill filed in this case goes exhaustively into the activities of the National Coal Association and denies in most vigorous fashion that this association has in any way violated the anti-trust statutes. Referring to the activities of L. Ert Slack, special Assistant Attorney General, and Frederick Van Nuys, U. S. District Attorney at Indianapolis, in bringing the Indiana indictments the bill charges that they "have deliberately and in pursuance of a general plan on their part, undertaken to destroy the whole structure of the bituminous coal industry as conducted for a long period in the United States."

The bill attacks the legal right of the government to remove the National Coal Association, its president, Colonel D. B. Wentz, and its vice-president, J. D. A. Morrow, to the District Court of Indiana for trial. The underlying principle in the indictment, it is held, is based upon the theory that all wage-scale agreements are illegal and that such agreements constitute a conspiracy. The bill sets forth that the National Coal Association had no part in these agreements any more than did Colonel Wentz or Mr. Morrow, neither of whom was in attendance when the agreements were made.

L. ERT SLACK'S ACTIONS CONTRADICTORY

The bill calls attention to the circumstances surrounding the injunction granted at the request of the government against the United Mine Workers in 1919. It is alleged that Mr. Slack, then the U. S. Attorney at Indianapolis, set up that the government had given its expressed approval to the Washington wage agreement. In that bill he held it to be a valid agreement and that the government had the right to ask for an injunction against the miners for violating that agreement. On that occasion it was used as the basis of his case. Now, in his capacity as an assistant attorney general, he points to this agreement as having been illegal and a conspiracy.

The National Coal Association is referred to in the indictments as the parent organization of the coal operators. It is set forth that the National Coal Association was organized and created long after many of the local organizations had been functioning. It was created for the purpose of co-ordinating the coal situation during the war. To the charge that it was organized with the idea of increasing prices, restricting production and creating zones of sale by handling a market report system, a vigorous denial is entered. It is asserted, on the contrary, that the National Coal Association has tried earnestly to increase production and that its statistical reports covered closed transactions only. These statistics showed the number of cars sold in different territories, prices at which the coal was sold, the class of customers and consolidated figures made up from returns made to the local association. The National Coal Association asserts that this is exactly the same type of information made available to dealers in grain through exchanges and to those interested in stocks. All of this information, it is pointed out, was available to the public, was published by coal trade papers and at all times was obtainable by the daily press.

Another high point in the bill is the reply to the charge that the National Coal Association, Colonel Wentz and Mr. Morrow were parties to a conspiracy to put coal on a spot-

price basis and that they succeeded in obtaining priority orders from the Interstate Commerce Commission. The orders referred to are Nos. 10 and 11, covering shipments to the Northwest and to New England. The attorneys for the National Coal Association aver that the activities of the association in that connection not only were perfectly legal and proper but were commendable, unselfish and patriotic and were undertaken at the request of representatives of the public in those sections. It is pointed out that every action in connection with those orders was in conjunction with the activities of representatives of the government.

It also is pointed out that the National Coal Association had nothing to do with the first six service orders. The bill showed such possibility of irreparable loss and damage to the plaintiffs that upon preliminary hearing the court entered the temporary restraining order. The government appeared simply to advise that it was not prepared to argue the case. The order is to remain in force until April 12. The verbiage of a portion of the court's order is as follows:

ORDER FORBIDS LEGAL INTERFERENCE

"It is ordered and decreed that the defendants herein and each of them, their assistants, agents, employees and representatives and their respective successors in office be, and they hereby are, restrained from serving or attempting to serve upon the individual plaintiff or any other officer, director, representative or agent of said National Coal Association any summons or other process issued or hereafter to be issued out of or by said U. S. District Court for the District of Indiana in the proceeding aforesaid under said indictment; also from instituting any proceedings, or attempting to institute, or causing to be instituted, or pressed to a hearing, any proceeding for the removal or attempted removal of the individual plaintiff Morrow, or said President Wentz or said Couffer, from the districts respectively where said plaintiff Morrow, said Wentz and said Couffer respectively reside as aforesaid, to said District of Indiana; and from serving or attempting to serve or causing to be served upon said plaintiff Morrow, or said Wentz, or said Couffer, any warrant or other process issued in connection with said proceedings; or otherwise depriving said individual plaintiff Morrow, or said Wentz or said Couffer or either of them of their liberty; and from interfering with or arresting or harassing or threatening to arrest or harass said plaintiff Morrow or said Wentz or said Couffer or either of them under any process whatsoever purporting to be based upon said indictment or issued in any such removal or other proceedings already or hereafter to be instituted at any time or place; and from in any manner interfering with the conduct of the business of the plaintiffs or either of them."

In the bill of complaint, which was filed for the National Coal Association by Rush C. Butler, its general counsel, and Stephen A. Foster, Fletcher Lewis and H. Prescott Gatley, of counsel, it is recited that the indictment in the first count charges the National Coal Association "with having continuously during the period of three years prior to the finding, presentation and filing of said indictment, knowingly, etc., engaged in a corrupt and unlawful conspiracy among themselves and with divers other persons to the grand jurors unknown, in undue, unreasonable, unlawful, direct and oppressive restraint of trade among the several states of the United States and with foreign nations, in violation of the aforesaid Sherman Anti-Trust law, which unlawful, corrupt conspiracy, said indictment charges, was intended to involve, and did involve, and was in truth and in fact, a conspiracy to restrain said trade concerning the mining, production, sale, purchase, distribution, and transportation of bituminous coal among said states and with foreign nations."

The association is charged also "with having been similarly engaged in a corrupt and unlawful conspiracy in re-

straint of commerce among said several states, etc. And said two hundred and twenty-six defendants are charged in the third count of said indictment with having been similarly engaged in an unlawful conspiracy in restraint of such trade and commerce. And said two hundred and twenty-six defendants are charged in the fourth count of said indictment with having during the same period combined and conspired together and among themselves and with divers other persons unknown to the grand jurors to monopolize trade and commerce among the several states, etc., in violation of said Sherman Anti-Trust law. And said two hundred and twenty-six defendants are charged in and by the fifth count in said indictment with having during the same period actually monopolized trade and commerce among the several states, etc., in violation of said Sherman Anti-Trust law."

Referring to the charge in the indictment that the priority orders issued by the interstate Commerce Commission in 1920 were influenced by the association and that they "caused a shortage of coal" when there was no shortage of available coal, the bill of complaint states that the government "sought to make appear as criminal, and as part of a criminal conspiracy, acts of the plaintiffs, National Coal Association and Morrow and the said Wentz, which not only were perfectly legal and proper, but were also thoroughly commendable, unselfish and patriotic, and free from any taint whatsoever of improper or illegal purpose, and were undertaken and performed pursuant to the suggestion and with the approval and sanction of representatives of the U. S. Government, and upon representations made to said plaintiffs, and said Wentz, by citizens and organizations in the Northwest and New England states, that unless some action was immediately taken to relieve the then existing and rapidly increasing coal shortage in such sections of the country, conditions there prevailing were such that a serious calamity to those sections would result, involving the shutting down of industries, the curtailment of railroad service, the cessation of other public utilities, the suffering of individual domestic consumers, and the actual freezing and starvation of men, women and children."

The bill further sets forth as reasons for not wishing to be tried in Indianapolis "that if said corporation plaintiff National Coal Association is forced in said District of Indiana under said indictment, said plaintiff would be compelled to stand trial with over two hundred and twenty other defendants; that said indictment covers the period of three years prior to its return and also contains allegations

covering the entire period of ten years prior to such return, and embraces within its scope practically every act or thing which has been done or performed by each and every of said two hundred and twenty-six defendants in connection with the coal industry during said period of ten years; and at the trial of said case the government will presumably attempt to introduce testimony in support of each and every one of the defendants who is brought within the jurisdiction of said U. S. District Court and placed on trial there, will presumably attempt to introduce evidence disproving each and every such charge; that such trial will require the introduction of records and other evidence, both documentary and oral, pertinent to each and every of the issues contained in said indictment and tending to establish either the guilt or innocence of each of said two hundred and twenty-six defendants, or so many of them as may be brought within the jurisdiction of the court and placed on trial; that the trial of so many defendants upon an indictment covering so long a period of time and embracing such a large number and variety of different charges will, as these plaintiffs are informed and believe, consume a long period of time, to wit, six months or more, and will, if the plaintiff National Coal Association is brought within that jurisdiction and there placed on trial, necessitate the production in the District of Indiana of the records, books, files and correspondence of said plaintiff, and the attendance of many of its employees for the purpose of giving testimony, and this will result in complete demoralization of the business and affairs of the plaintiff the National Coal Association for a long period of time, and will put it to great and unconscionable expense in defending itself against the unwarranted charges contained in said indictment, under none of which is it guilty and with most of which it has no possible connection whatsoever, such as the wage scale conferences and agreements in the Central Competitive Field, forming, as they do, a prominent and fundamental part of the charge of conspiracy which is the basis of said indictment; said loss and injury to the said corporation plaintiff would in the aggregate be many times the aforesaid sum of \$3,000, exclusive of interest and cost; and said corporation plaintiff would be obliged to pay all of such expense and incur all of such loss before it could obtain a review either by the Circuit Court of Appeals or by the U. S. Supreme Court of the action of the trial court, should it hold that it had jurisdiction over said plaintiff, and said plaintiff has no adequate remedy at law, and its rights can be protected only in this court of equity and by the granting of the relief hereinafter prayed."

Eastern Coal Shippers to Northwest Seek Adjustment Of Freight Rates from Mines to Lower Lake Ports

AT A MEETING of about two hundred coal operators from Ohio, Pennsylvania, Kentucky and West Virginia, and dock operators from the Northwest, held at the Hollenden Hotel, Cleveland, March 31, resolutions were adopted whereby a direct appeal will be made to the presidents of the lake coal-carrying roads for a readjustment of freight rates to the lower Lake ports, for the purpose of stimulating the movement of bituminous coal from Eastern fields to the Northwest. Under the present rates the Eastern fields are at a disadvantage of 58c. per ton in competition with the Illinois fields, and this maladjustment is asserted to be the dominant reason why practically no contracts for Lake coal for the Northwest have been placed in the East this season as compared with previous years.

Eastern roads, therefore, will be asked to readjust their rates so as to absorb at least a part of the excess burden placed upon Eastern coal because of war-time rate advances, prior to which these competing fields were on somewhat of a parity. In presenting their case directly to the heads of the railroads involved the interests represented are acting on the suggestion recently made by the Interstate Commerce Commission that it is a matter which ought to be settled

amicably between the carriers and the shippers. It is not expected that a formal complaint will be filed for an adjustment of rates on this season's coal movement, although immediate action would aid in getting coal moving to the Lakes and starting mines operating.

Previous conferences have been held with traffic executives of the roads, but the road officials have declined to make the necessary adjustment in the rates; hence the action to place the entire matter directly before the railroad presidents.

The conference was called by D. F. Hurd, secretary of the Pittsburgh Vein Operators Association of Ohio. Thomas K. Maher, president of the Maher Collieries Co., large lake coal shippers, presided as chairman of the meeting. It is expected that another conference will be held on April 12, to receive reports from the committee appointed and to give further consideration to the subject.

The railroads involved are the Pennsylvania, New York Central, Erie, Baltimore & Ohio, Norfolk & Western, Chesapeake & Ohio, Hocking Valley, Wheeling & Lake Erie, Bessemer & Lake Erie, Kanawha & Michigan and Pittsburgh & Lake Erie.

Federal Court Upsets Arbitrary Price Fixing by Navy On Commandeered Coal; \$198,000 Involved

JUDGE BODINE, in the Federal Court at Trenton, N. J., last week set a new and startling precedent for the coal trade. The New River Collieries Co. had sued the U. S. Government for the difference between the market price and an arbitrary figure fixed by the navy on 60,000 tons of coal commandeered by the navy under the Lever Act. When the coal was taken by the navy in the period between late in 1919 and February of this year payment was offered at about \$3.60, this representing the navy's idea of just compensation. The New River Collieries Co. refused settlement on this basis, and elected to sue the government in the Federal courts, a privilege guaranteed by the Lever Act.

The coal company contended that the 60,000 tons of coal was worth \$499,000, or about \$281,000 more than the government offered to pay. The government succeeded in having a jury trial but was unsuccessful in an effort to introduce evidence as to the cost of production of this coal. The judge held that the only question at issue was one of fact, involving the market value of the coal at the time it was commandeered. He further held that as the coal had been shipped to Tidewater for export, the only question before the jury was the market price at which the coal might have been sold on the open market for that purpose.

The trial lasted three days, during which time the coal company introduced a mass of evidence on the subject of a spot market for export coal. Trade journal quotations, the testimony of jobbers engaged in the buying and selling of coal at Tidewater, and the record of sales made by the New River Collieries Co. were introduced by E. L. Carpenter, of the plaintiff coal company. After five hours' deliberation the jury returned a verdict in favor of the coal company, awarding it \$198,000 above the arbitrary price fixed by the navy, or a total of \$416,000 for the 60,000 tons.

DECISION MAY COST NAVY HEAVY DAMAGES

It is understood that of the fifty-two companies from which the navy commandeered coal forty-two companies accepted the navy's offer, five companies accepted the navy's offer under protest, and five companies elected to sue the government. It is understood that other companies will now file suit and that the total damages to which the government is liable as a result of this decision will run into hundreds of thousands of dollars. There is a possibility that the government will appeal the case to the Supreme Court because of the far-reaching effect of the principle laid down by Judge Bodine in all cases where the government has commandeered or may in the future commandeer private property.

In his charge to the jury Judge Bodine said: "the government had a legal right to take this coal, but under our Constitution and laws it was the duty of the government to pay the plaintiff just compensation therefor."

"The issue between the parties is simply what is just compensation. It is not disputed that the coal was taken. The time it was taken, and the quantities taken are admitted facts."

"The plaintiffs' proofs show that at Hampton Roads at the time in question there was a market for the kind and quality of coal mined by it. . . . And that this coal . . . at a market price which fluctuated as the supply and demand varied."

"The plaintiffs' proofs further show that they should have sold this coal for export, and that they not only could have sold coal which the Navy Department took for this purpose, but that they had sold and did sell during all this period a quantity of their coal for export trade."

"They have also called witnesses to show there was a market price at Hampton Roads during all the time of the taking of this coal for coal of this kind and quality. . . . From all of the evidence on the subject as to what the market price was, the fair market price of coal at the time of the taking you will find your verdict."

" . . . So from the proofs in the case, they being in-

controverted, you would find that there was a market for coal at Hampton Roads at the time of the taking of this coal, and then it would be a question for you to determine what was a fair market price of that coal."

"I have excluded a great deal of the defendant's offer to prove what it claimed was just compensation. It has offered to prove that it fixes the price of coal on the basis of the cost of production and a reasonable profit thereon. I have excluded all that and limited your determination to finding what was the fair market price from the evidence adduced here of the coal taken by the Navy Department on the date on which it was taken."

"You of course know that it is necessary for the preservation of the Government that it should have power to take coal and other necessities as it needed. But, as counsel for the plaintiff has called to your attention, our Constitution provides that coal cannot be taken without giving just compensation. And just what is just compensation is not what a bureau head or another department of the government may say is a fair price, nor what Congress may say is a fair price, but courts and juries alone can say what is fair compensation between the government and a citizen with respect to property that has been taken, so long as the Constitution remains. And the courts have said that where an article was traded in in a market, its fair market price was the measure of just compensation, and this must be so because if one citizen may sell his property in the open market at a given figure, even though the figure be high, just compensation for the citizen whose property is taken must be the same price as his competitor is obtaining in the open market. Otherwise, a department of the government by taking one man's property and not taking another's might enrich one citizen and impoverish another. Just compensation for property taken by the government must necessarily be the same compensation as the property would have sold for in the market to some one other than the government. If its value in the market were so many dollars, just compensation for the property when taken by the government is the same amount of dollars as it would have brought in the market."

"Because the proofs show that this coal could have been sold in the export market, and that fact is not controverted, and the export market was higher than the domestic market, I have excluded proof to show that the domestic market was lower. A citizen whose property is taken is entitled to compensation for the most profitable use to which the property could have been put, in a general sense."

"As I think my charge shows, I excluded from consideration of the jury everything except the question of the fair market value as testified to by those who testified with respect to transactions on that Hampton Roads market. Now, if I am wrong in the trial of this case I am wrong in that. That is the whole criterion of everything that I have been trying to do. And it seems to me, and this is part of the record, that if you say to the Circuit Court of Appeals that that is what I had in mind, and for that reason everything else was excluded, if I am wrong on that, why we will have the pleasure of trying the case over again."

February Exports of Bituminous Coal from United States and Great Britain

Destination Countries	(In Gross Tons)		Feb. 1921	
	From U. S.	From Great Britain	From U. S.	From Great Britain
France.....	72,649	1,232,085	54,132	369,641
Italy.....	81,739	310,445	104,693	310,934
Netherlands.....	49,634	32,269	38,555	106,268
Sweden.....	8,886	158,153	9,521	68,566
Norway.....		61,402	751	48,275
Denmark.....	5,878	91,012	28,040	167,392
South America.....	138,306	102,840	140,818	87,866
Other countries.....	811,714	612,840	882,160	570,206
Totals.....	1,168,806	2,601,046	1,258,670	1,729,148

Navy Department Opens Supplementary Coal Bids

SUPPLEMENTARY anthracite and bituminous coal bids were received by the Navy Department on March 29, the quantities for which bids were invited being as follows:

Anthracite—3,000 tons of egg for the Washington (D. C.) Navy Yard; 200 tons of egg for the Anacostia (D. C.) air station; 200 tons of egg and 100 tons of nut for the mine depot at Yorktown, Va.; 160 tons egg, 135 tons nut, 250 tons stove and 400 tons broken at the Norfolk Navy Yard; 125 tons egg at the Norfolk Hospital; 150 tons egg at the Charleston Hospital and 1,000 tons stove at the Charleston Navy Yard.

Bituminous—600 tons at the Cape May air station; 400 tons at the Fort Mifflin (Pa.) ammunition depot; 200 tons at the Anacostia air station; 700 tons at the Greenbury Point (Md.) radio station; 1,500 tons at the Annapolis engineering station; 34,000 tons at the Annapolis Naval Academy; 5,300 tons at the Portsmouth (Va.) hospital; 600 tons at the Portsmouth ammunition depot; 900 tons at the Yorktown mine depot; 1,200 tons at the Hampton Roads training station; 40,000 tons at the ordnance plant, South Charleston, W. Va.; 25,000 tons at the Port of Philadelphia; 1,550 tons at the Alexandria (Va.) torpedo station and 2,500 tons at the Annapolis Naval Academy.

The bids were:

Anthracite—Consumers Coal Co., Charleston, S. C., delivery Charleston, 150 tons egg, \$17.50 per ton; 1,000 tons stove, \$16.

Weston Dodson Co., Bethlehem, Pa., 3,000 tons egg, delivery Washington Navy Yard, \$10.64 April to September; \$12.57, balance year. Two hundred tons egg, District of Columbia air stations, \$13.83. Two hundred tons, egg, Yorktown, Va., \$14.63; 100 tons, nut, \$15.13. Norfolk, Va., delivery 160 tons, egg, \$12.71; 135 tons, nut, \$13.21; 250 tons, stove, \$13.21; 400 tons, broken, \$13.18; 125 tons, egg, \$12.71. Charleston, S. C., delivery, 1,000 tons, stove, \$18.37.

William Johnson & Co., Charleston, S. C., 150 tons, egg, \$17.52; 1,000 tons stove, \$16.22.

Philadelphia & Reading Coal & Iron Co.—Yorktown, Va., delivery, egg, \$7.75; nut, \$8.05. Norfolk delivery, egg, \$7.75; nut, \$8.05; stove, \$8.05; broken, \$7.75. Norfolk delivery, egg, \$7.75. Charleston delivery, egg, \$7.75; stove \$8.05. Washington, D. C., egg, \$7.75; mine prices.

Thomas F. Slattery, Philadelphia—Washington delivery, \$7.50, April to September, \$8 balance year; same prices on egg for Yorktown, Norfolk delivery; mine prices.

Coal Mont Moshannon Coal Co., Philadelphia—Washington delivery egg, \$7.75, April to September; \$8.75 balance of the year. Yorktown delivery, egg, \$7.75 and \$8. Norfolk delivery, egg and broken \$7.75; stove and nut, \$8. Norfolk delivery, egg, \$7.75 and \$8.75. Charleston delivery, stove, \$8 and \$9; mine prices.

Bituminous—H. P. Dryden & Bro., Piedmont, W. Va., \$25,000 tons, \$4.48; same price for 1,550 tons; \$7.50 for 2,500 tons; Baltimore delivery; \$8.25 same quantity, Annapolis delivery; 600 tons, Cape May delivery, \$7.33 and \$7.63; mine price, \$3.36 and \$3.92; 400 tons, Fort Mifflin, Pa., \$6.89 and \$7.20; mine price, \$3.36 and \$3.92; 1,500 tons Annapolis, \$8.67 and \$8.98; 34,000 tons Annapolis, \$7.64 and \$7.95.

W. H. Blight, Elmira, N. Y., 600 tons Cape May, \$3.10; \$3.40 and \$3.65; 400 tons, Fort Mifflin, same prices.

Dexter & Carpenter, New York, 2,500 tons, Baltimore, \$6.50 and \$6.10, \$6.94 and \$6.38, \$7.22 and \$6.66; 1,500 tons at Annapolis, \$8.39 and \$7.83, \$8.67 and \$8.11, \$8.35 and \$8.95; 34,000 tons, Annapolis, \$7.39 and \$6.83, \$6.67 and \$7.11, \$7.35 and \$7.39.

Lake & Export Coal Corporation, Huntington, W. Va., 5,300 tons, Norfolk, \$3.92, \$4.20 and \$4.424; 600 tons, Portsmouth, Va., same prices; 900 tons, Yorktown, Va., same prices; 40,000 tons, Charleston, W. Va., \$3.528, \$3.92 and \$4.20; 1,550 tons, Alexandria delivery, \$3.92, \$4.20 and \$4.424.

W. A. Marshall & Co., New York, 25,000 tons, Philadelphia, \$7.50, and \$7.75; at mines, \$4.48.

Crozer-Pocahontas Co., Philadelphia, 5,300 tons, Norfolk and 600 tons Portsmouth, \$3.92 at mines.

Fayette Smokeless Fuel Co., Mount Hope, W. Va., 5,300 tons, Norfolk, \$3.85, \$3.90 and \$3.95; 40,000 tons, Charleston, \$3.85, \$3.90 and \$3.92.

Flat Top Fuel Co., Bluefield, W. Va., 1,550 tons, Alexandria; 1,500 tons Norfolk and 40,000 tons Charleston, W. Va., \$3.90 per ton at mines.

L. A. Snead Co., Washington, D. C., 200 tons, D. C., \$10.50, delivered; 5,300 tons, Norfolk, \$3.85; 600 tons Portsmouth, \$3.85; 900 tons Yorktown, \$3.85; 1,500 tons, Alexandria, \$3.85; mine prices.

Consolidation Coal Co., Washington, D. C.: 34,000 tons Annapolis, \$8.20; 2,500 tons Baltimore, \$7.50, at Annapolis, \$8.20.

Imperial Coal Corporation, Philadelphia: 600 tons Cape May, \$7.52 and \$7.70; at mines, \$3.82 and \$4; 400 tons Fort Mifflin, \$7.10 and \$7.30; at mines, \$3.82 and \$4. Twenty-five thousand tons, Philadelphia, \$6.62 and \$6.92; alongside vessel, \$6.85 and \$7.15; aboard cars, \$6.78 and \$7.08; trimmed in bunkers, \$7.40 and \$7.07; at mines, \$3.60 and \$3.90. The company also submitted the following prices: \$6.37 and \$6.67; \$6.60 and \$6.90; \$6.53 and \$6.83, \$7.15 and \$7.45; \$3.35 and \$3.65. Fifteen hundred and fifty tons, Alexandria, \$7.10 and \$7.30; mine price, \$3.82 and \$4.

Quemahoning Coal Co., Somerset, Pa., 700 tons, Maryland Radio Station, \$7 and \$7.35; 1,500 tons Annapolis, \$8 and \$8.37; 34,000 tons, Annapolis, \$7 and \$7.37.

Indict Chicago Coal Retailers, Charged with Boycotting and Blacklisting

INDICTMENTS charging conspiracy, boycotting and blacklisting were returned Saturday, April 2, against officers of the Retail Coal Bureau, the Retail Coal Merchants' Association of Chicago and several private detectives of Chicago. The presentment charged conspiracy to commit acts injurious to public trade and to regulate and fix prices so as to eliminate competition by independent coal dealers.

Those named in this charge, held under bonds of \$1,500 each, included Tracy G. Wright and Robert H. May, officers of the Retail Coal Bureau; Robert H. Clark and Nathaniel H. Kendall, officers of the Chicago Retail Coal Merchants' Association.

The same men also are charged with conspiracy to form a boycott and blacklist against six independent coal dealers.

New England Receipts of Coal in January

RECEIPTS of anthracite in New England in January, 1921, were 958,981 net tons—315,483 tons received by tidewater and 643,498 tons by rail—according to statistics compiled by Edward F. O'Dowd, statistician to the Fuel Administrator for Massachusetts. This compares with 865,000 tons of anthracite received in January, 1920.

Bituminous coal receipts in January, 1921, were 1,687,784 net tons, divided between 707,004 tons by tidewater and 980,780 by rail. The corresponding figures for January, 1920, were 1,477,194 tons, of which 700,856 came by tide-water and 776,338 tons were shipped in by rail.

New York City Saves \$212,761 on Coal

UNDER contracts awarded March 31 by the Commissioner of Plants and Structures of New York City for coal for municipal ferries the city will save \$212,761 as compared with last year. The contracts run for the new coal year and are as follows, delivered New York harbor per net ton:

Staten Island Ferry	80,640 tons buckwheat No. 1 at \$7.98
39th Street Ferry	26,880 tons buckwheat at 7.45
Astoria Ferry	6,048 tons bituminous at 8.42

The bidders in each case agreed to incorporate a clause giving the city a reduction in the event of lowered freight rates during the life of the contracts.

International Mine Rescue Meet at St. Louis

ARRANGEMENTS have been made by the Bureau of Mines to hold this year's International Mine Rescue and First Aid meet at St. Louis, Sept. 1, 2 and 3. Teams representing Canada, England, France and Belgium will attend. A conference on the standardization of mine-rescue methods will be held during the meet. Commercial exhibits of mine-rescue apparatus will be displayed in conjunction with the meet, the Joseph A. Holmes Memorial Association will hold its annual meeting and awards will be made of its heroism medals.

British Miners Strike for Subsidy, So That Coal May Be Sold to Foreigners and Citizens at a Loss

DECLARING that they will not permit of the reduction in wages which Government control of the coal industry makes absolutely necessary, the mine workers of Great Britain on April 1 went on strike, calling out everyone, including those without whose services the mines cannot be kept from flooding and filling with gas. These men, who are termed "safety workers" in Great Britain and who include the pumpmen, fanmen and hoisting engineers ("engine winders"), usually have been excluded in strike calls, for if they are withdrawn it will be weeks and even months in some cases before work can be resumed. In 1919 engine men and pumpmen for the first time were called out on a large scale. This was in the local Yorkshire strike. At that time the navy men were pressed into the service and the mines were saved, though one or two are said to be still flooded.

The present strike was ordered by the Miners' Federation, which organization is not likely to receive any great support from other unions owing to the general slackness of funds and shortage of work. Sir Robert Horne, president of the Board of Trade, on March 30 called on the miners' leaders to reconsider their decision, especially as to the flooding of the mines. Strange to say, the miners are more enraged with the government than with the mine owners. They want the taxpayer to come to the aid of the industry and pay it a subsidy, so that the unprofitable mines may be made workable without any reduction in wages.

But the government has no disposition to be so benign to the coal industry in view of the fact that other industries which must be taxed for that benignity are themselves in difficulties and working irregularly. In fact, their misfortunes are greater than those of the coal industry. The government feels that the taxpayer has been gouged long enough. Since Jan. 1 the government has been committed to the payment of £7,000,000 a month, having subsidized mining to this amount. The miners want the time extended to Aug. 31, increasing the subsidy from £21,000,000 to about £60,000,000.

WAGES OFFERED MORE THAN DOUBLE THOSE OF 1914

The wages the Derbyshire and Nottingham mine owners are offering, while 3s. 6d., or 84c., below that paid under the recent scale, are 110 per cent above those paid in 1914. The mine workers in these two countries are willing to accept a reduction of 2s. 6d., or 54c.

On March 31, somewhat to the surprise of everyone, the British Government, without waiting for the strike to commence, declared a "state of emergency" under a law that has not been put into operation since its enactment last October. The Emergency Powers Bill thus brought into action declares that "if any action has been taken or is immediately threatened by any persons or body of persons of such nature and on so extensive a scale as to be calculated by interference with the supply and distribution of food, water, fuel, light or with the means of locomotion, to deprive the community or any substantial portion of the community of the essentials of life," a state of emergency would be created and any government department would be empowered to make such regulations as might be deemed necessary for the preservation of peace and for the securing of the necessities of life and transit essential for the safety of the community.

Nothing in the act is to be construed as authorizing any form of military or industrial conscription. Nor can any regulation be promulgated that will make it an offense for any person to take part in a strike or peacefully to persuade any other person to take such action. All the regulations issued have to be laid before Parliament, and they will have the force of law, but they may be revoked, altered or added to by resolution of both houses. They remain in force for seven days unless a resolution of both houses provides for

their continuance. Under the law it was necessary to call Parliament together within five days, so a proclamation was made April 1 calling together both houses April 4.

The suspension is almost complete. Two mines in Yorkshire, one in Northumberland, one in Scotland and one in North Wales are working, the men having promised to continue work provided the wage scale arrangements elsewhere are duplicated at these plants.

Unfortunately while these few mines worked the rest were idle, that idleness extending to the pumpmen and enginemmen despite the fact that they have a separate union and were disposed to go on working. As a result of their strike the flooding of the mines has reached a critical stage. The sections where the pumpers are to be found at work are Scotland, Northumberland, Yorkshire and Monmouthshire, but even there defections are daily experienced. In six collieries in Staffordshire and one in the Forest of Dean the water has gained the upper hand, and in the former county the loss from flooding is already placed at \$5,000,000. In the Scottish districts, despite the fact that the pumpers in general did not strike, some mines are in serious condition from failure to remove the incoming water. Attempts are being made everywhere to run the pumps by volunteers from among the clerical forces of the mines.

At Rhymney the miners held a mass meeting and decided that they would not permit pumping to continue at Pontllynn. They proceeded in consequence to that colliery and threatened the officials. As a result the pit ponies were brought to the surface. At Neath demonstrations were made against non-unionists.

On April 3 at a meeting of the Liverpool branch of the National Union of Railwaymen a vote was taken as to the desirability of a sympathy strike, the membership recording its preference for such a suspension. Leaders of the railway and transport workers met on the same day to discuss what should be the action of the "triple alliance"—miners, railway and transport workers—at conferences to be held on Tuesday and Wednesday of this week. Should these men decide to strike, the number of the strikers would be raised to 5,000,000. The mine workers aggregate 1,200,000. As 1,500,000 men in other trades are idle, the situation is quite tense. Arthur Henderson, a powerful labor leader, and a Cabinet officer during the war, is endeavoring to overthrow the Lloyd George administration and replace it by a Labor, perhaps a Socialist, government, the refusal to continue the payment of subsidies being regarded as basally an attempt to overthrow unionism and the principle of the living wage.

Coal-Mine Fatalities Decline

FEWER lives were lost in coal mines in 1920 in proportion to the output of coal than in any previous year, according to a report of the Bureau of Mines. During that year only 2,260 men were killed by accidents at coal mines, a decrease of 57 from 1919, although there was an increase of more than 18 per cent in the coal output. The bureau estimates that for every million tons of coal mined 3.50 lives were lost, as compared with 4.24 in 1919. It estimates that 775,000 men were employed in coal mines in 1920, an increase of 10,000 over 1919.

There were decreases of 64 per cent in fatalities due to mine fires; 38 per cent in fatal accidents caused by explosives; 14 per cent in deaths resulting from explosions from gas and coal dust; 16 per cent in haulage accidents above ground; while there were increases of 10 per cent in underground accidents due to electricity; 6 per cent in fatalities caused by underground haulage and 2.5 per cent in deaths caused by falls of roof and coal. There were eight disasters in 1920, causing a minimum of five deaths each, resulting in a total of 61 fatalities, as compared with nine similar accidents in 1919, in which 201 lives were lost.

Bids on Coal for Panama Railroad Show Wide Variation; Some Offers Disregard Changes in Miners' Wages

BIDS for furnishing the Panama Railroad Co. with any part of the company's coal requirements, estimated at 700,000 tons, during the twelve months ending April 30, 1922, were opened in New York City on March 31. There were twenty-eight bidders. Several of the bidders specified that the quoted prices are to continue during the entire year regardless as to any increase or decrease in miners' wage scale.

The bidders and prices quoted follow:

W. C. Atwater & Co., Inc., 20,000 gross tons monthly, Pocahontas run-of-mine, \$3.60 per ton for May and June delivery; \$3.90 per ton thereafter until April 30, 1922.

Ajax Coal Mining Co., 750,000 tons New River and Pocahontas, pools 1 and 2, navy standard; \$3.70 per net ton.

C. G. Blake Co., Inc., 220,000 gross tons; 10,000 tons in May and June each, balance of 200,000 in monthly installments; New River; \$3.36 per gross ton.

Bluefield Coal & Coke Co., 100,000 tons, Pocahontas, \$4.10 per gross ton.

Castner, Curran & Bullitt, Inc., 120,000 tons; pools 1 and 2, \$3.92.

Crozier Pocahontas Co., 180,000 tons, navy standard, \$3.92. Hartwell & Lester, Inc., 60,000 gross tons, navy standard, New River, pool 1, \$4.02.

Houston Coal Co., 120,000 net tons, 10,000 tons monthly beginning May 1, pools 1 and 2, \$4.03.

Lake & Export Coal Corporation, 15,000 tons per month, New River and Pocahontas run-of-mine, \$3.85.

J. W. Lowe Co., 10,000 tons Pocahontas run-of-mine, pool 1, \$4, subject to acceptance in fifteen days.

Maryland Coal & Coke Co., 150,000 tons New River, pool 2, \$4.40 per gross ton.

New River Collieries Co., 120,000 gross tons, 10 per cent more or less, pool 1, \$4.20 gross ton; subject to acceptance by noon on April 11.

Northern Coal Co., 4,000 gross tons monthly, pools 1 and

2, \$3.60 for first six months, and \$3.90 for last six months.

Pocahontas Fuel Co., Inc., 360,000 gross tons, navy standard; price to be named by seller on the 25th of each month for the preceding month but not to exceed \$4.08 at any time.

Pocahontas Coal Sales Co., 40,000 tons, Pocahontas run-of-mine, pool 1, \$3.86.

H. W. Payne & Co., Inc., for the Reid Coal Mining Co., 700,000 gross tons, pools 1 and 2, \$3.65.

Raleigh Smokeless Fuel Co., 10,000 net tons per month, pools 1 and 2, \$3.50 per net ton; subject to acceptance in ten days.

Smokeless Fuel Co., 5,000 tons per month, \$3.95.

L. A. Snead Co., 50,000 tons (4,000 tons per month), pools 1 and 2, half each; \$3.60 first six months; \$3.90 last six months.

United Collieries Corporation, on behalf of the Becarra Coal & Coke Co., of Philadelphia, 100,000 tons, pools 1 and 2, \$4.30.

White Oak Coal Co., 120,000 tons New River, pool 1, \$3.92.

Weston Dodson Co., 36,000 tons pool 1, \$3.90; 36,000 tons pools 1 and 2, \$4.15, and 36,000 tons pool 1 or 2, \$4.40.

Fayette Smokeless Fuel Co., 200,000 tons, run-of-mine, pools 1 and 2, \$3.75 per ton to Oct. 1, \$3.90 thereafter.

N. B. Whitman & Co., 120,000 gross tons, \$4.57 per ton; subject to acceptance before April 15.

Central Pocahontas Coal Co., 120,000 tons, pools 1 and 2, \$3.90.

Chesapeake & Ohio Coal Agency, pools 1 and 2, 8,000 tons monthly; pool 1, \$4.20 per ton; 25,000 tons monthly pools 1 and 2, \$3.90 per ton.

Dexter & Carpenter, Inc., 12,000 tons monthly, Pocahontas, pool 1, \$4.10.

Fort Dearborn Coal & Export Co., 100,000 tons, Pocahontas, pool 2, \$3.92.

Flat Top Fuel Co., 300,000 gross tons, Pocahontas & New River, run-of-mine, pools 1 and 2, \$3.92.

Coke Operators Cut Wages of Their Men

FOLLOWING the example of W. J. Rainey, of the Connellsville region, who, on March 8, reduced wages 18 per cent, the independent coke operators of the Connellsville region on April 1 restored the Nov. 10, 1917, wage scale, which means a reduction of from 22 to 30 per cent on all grades of mine and oven labor. W. J. Rainey's cut on March 8 being less drastic than that decided on by the independent operators, he made a further cut on April 1, bringing his wage schedules to the level of the others. Pickmining, which is the basis of the scale, is reduced from \$3.25 to \$2.29 per 100 bushels. No intimation has as yet been made of any reduction by the H. C. Frick Coke Co.

West Kentucky Will Not Cut Wage Scale

WEST Kentucky mines are divided into two classes—those owned by members of the West Kentucky Coal Operators' Association which have a contract running to April 1, 1922, and those operated by members of the Coal Operators' Association which have a contract which expires as early as April 1 of the present year. The first group is the larger. It comprises two-thirds of the mining production of west Kentucky, whereas the other association produces only one-third of the output. The smaller association is active in Webster, Hopkins and Christian Counties and in parts of Union County. As stated, its contract with the union would have closed April 1 last, but it reached an understanding on March 24 with the United Mine Workers by which the wage rate would not be reduced, the sessions in which this decision was made having started Monday, March 21. The St. Bernard Mining Co.'s mines and the two mines of the Hart Coal Corporation are not affected by this agreement, as their contracts do not expire

till next year. All the other mines in the district are parties to this renewal of contract.

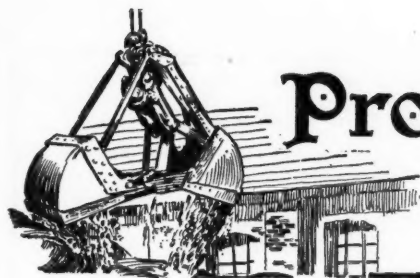
In the southeastern end of the state, in the County of Letcher, which comprises the Elkhorn field, the Amburgy Coal Co., of Dalna, has fifty miners on strike, and the company proposes to evict them at once if they will not accept reduced wages.

Propose Twenty-Cent Tax on Anthracite

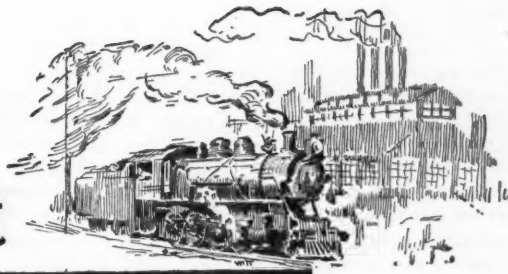
ABILL having the support of the state administration was introduced into the Pennsylvania State Legislature on March 30 providing for a tax of 2½ per cent on all anthracite mined and prepared for market. This tax is expected to raise between \$11,000,000 and \$12,000,000 a year, the estimate being based on 75,000,000 tons of prepared coal annually sold. As the cost of domestic sizes is about \$8 per ton at the mines, the tax will be about 20c. on coal of that character. The original proposition was to place the tax on all coal, bituminous and anthracite alike, selling at over \$5 per ton, but for some reason this plan was dropped.

THE BUREAU OF MINES has rejected bituminous coal bids recently received which are higher than \$3.75 per gross ton or \$3.3482 net ton f.o.b. mines on New River coal; those higher than \$3.92 gross ton or \$3.50 net ton on Maryland, Pennsylvania and Northern West Virginia coal and all bids on gas coal except the one at \$2.52 gross or \$2.25 net ton. Bids not eliminated by this action are still under consideration.

ROCKWOOD COAL CO. BID \$4; NOT \$2.—In *Coal Age* of March 24 the Rockwood Coal Co., of Rockwood, Pa., was stated to have bid \$2 per gross ton on the Government Fuel Yard contract. This was a typographical error, the bid being \$4.



Production and the Market



Weekly Review

HARDLY a flurry in coal prices was caused by the first few days of the British strike. With the possible exception that ships will now bunker on this side for the round trip, no increase in demand is forecast unless the strike should be very greatly prolonged. The world is so full of coal already mined as compared with what is being consumed day by day that the loss of 60,000 to 70,000 tons a day—the extent of British exports—will not be felt for some time.

It is reported that some English firms had asked for options on tonnage in the event of a strike but that none has been tendered by American firms. So flat is the market at Tidewater that the few foreign inquiries received the first of this week were at less than \$6, Hampton Roads, that is, at the market as it has been for weeks past.

BUYERS HOPE FOR REDUCTION OF MINERS' WAGES

Just as out of thin air a rumor and then the idea has grown that freight rates should be, and therefore would be, reduced, so the thought is gaining ground that coal-mine labor must next take a reduction after labor on the railroads and in the iron and steel industry has been liquidated, and while business is in this

questioning attitude it is not investing in next winter's coal.

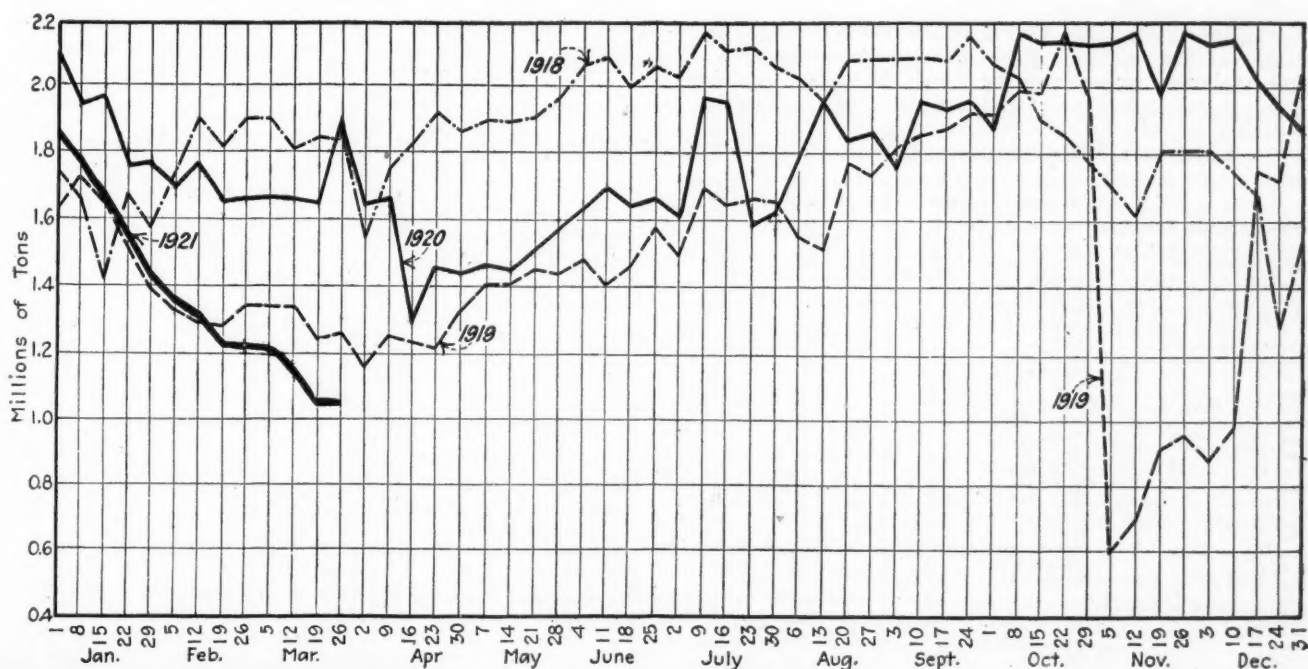
Just to illustrate their confidence in the future some large suppliers of coal in the Middle West, it is reported, are offering to ship coal to their regular customers for next winter's use, giving thirty days' time and carrying the invoices until October at 7 per cent. Few takers have been found so far. The uncertainty surrounding the future price of coal and freight rates is so discouraging to any storage movement that bituminous production is dropping week by week until it is now but little if any above 6,000,000 tons a week, or at the rate of but 300,000,000 tons a year, compared with last year's output of 556,000,000 tons.

Coal Age index stands at 101—that is, without change from last week. It is significant that prices on Lakes business closed so far this year at \$3.50 represent the starting point at which contracts were made in 1920, although there has been one increase in wages since that time.

BITUMINOUS

Production continues to decline; during the week ended March 26 the total output was 6,412,000 net tons, nearly 100,000 tons, or 1.4 per cent, under the figure for the last

Daily Average Production of Bituminous Coal*

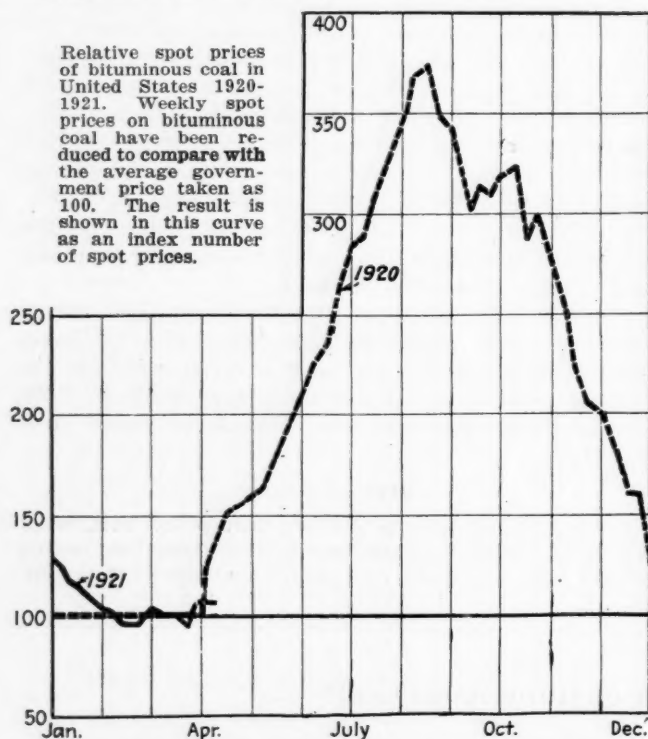


*From weekly report of Geological Survey.

preceding week and but 58 per cent of that for the corresponding week in 1920. Some slight loss may be attributed to the observance of Good Friday in the beginning of the next period (March 28 to April 2). Easter Monday also held down the tonnage. Coupled with this, the fact that many contracts expired on April 1 will tend to reduce production to the 6,000,000-ton mark for the week ended April 2.

Taking the country as a whole, "no market" is now causing a loss of 60 per cent in working time. Northeastern Kentucky was the hardest hit late in March, with losses from this cause of more than 80 per cent. Production in the Northern and Middle Appalachians declined to 3,863,000 net tons the week ended March 19, as compared with 4,029,000 tons the week preceding.

Coal Age index of spot prices remains at 101. While actual orders are as scarce as ever, some inquiry is developing in both the contract and spot markets. Produc-



ers are finding the same unreceptive attitude among buyers because of the existing difference in the two markets. In some instances prices for the year's business are being

Estimates of Production

FROM THE WEEKLY REPORT OF THE GEOLOGICAL SURVEY
(NET TONS)

BITUMINOUS COAL

Total Bituminous, Including Coal Coked

	1921		1920	
	Week	Coal Year to Date	Week	Coal Year to Date a
March 12b.....	6,900,000	504,783,000	10,277,000	458,178,000
Daily average...	1,150,000	1,733,000	1,713,000	1,567,000
March 19b.....	6,506,000	511,289,000	10,348,000	468,527,000
Daily average...	1,084,000	1,719,000	1,725,000	1,570,000
March 26c.....	6,412,000	517,701,000	11,015,000	479,542,000
Daily average...	1,069,000	1,707,000	1,836,000	1,575,000

(a) Less 2 day's production during first week in April to equalize number of days covered for the two years. (b) Revised from last report. (c) Subject to revision.

ANTHRACITE

	1921		1920	
	Week	Coal Year to Date	Week	Coal Year to Date a
March 12.....	1,926,000	85,783,000	1,648,000	87,305,000
March 19.....	1,687,000	87,470,000	1,601,000	88,906,000
March 26.....	1,564,000	89,034,000	1,921,000	90,827,000

(a) Less 2 days' production during first week in April to equalize number of days covered for the two years. (b) Cumulative production revised as in Weekly Report 193.

BEEHIVE COKE

	1921		1920	
	Week Ended	Mar. 27	1921	1920 c
Mar. 26a	Mar. 19	Mar. 27	to Date	to Date
1921	1921	1920	2,473,000	5,475,000
99,000	118,000	482,000		

(a) Subject to revision. (b) Revised from last report. (c) Less 2 days' production during New Year's week to equalize number of days covered for last two years.

quietly shaded, but the tendency is still to hold off. The contract range may be quoted as 90c.@ \$1 above the spot market for twelve months' business and 25c. higher for thirty and sixty days delivery.

PRODUCERS ISSUE WARNING OF IMPENDING SHORTAGE

The wise operator or shipper is warning his connections of the autumn shortage that is inevitable with a continuation of the buyers' strike. In the Middle West the main trouble in the stocking program appears to be lack of finances for purchasing, as consumers agree that now is the time to buy. Some operators are making prompt shipments, carrying the account, after thirty days, at 7 per cent interest until late summer or autumn. In booking orders for summer delivery they are taking the business only on a basis of market price, time of shipment.

Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

	Market Quoted	Gov't Price	Mar. 8 1921	Mar. 29 1921	April 5 1921†
Low-Volatile, Eastern					
Pocahontas mine run....	Columbus.....	\$2.35	\$3.50	\$3.25	\$3.50
Pocahontas lump.....	Columbus.....	2.60	5.50	5.50	5.00
Pocahontas mine run....	Chicago.....	2.35	3.65	4.15	4.15
Pocahontas lump.....	Chicago.....	2.60	5.00	5.15	4.75@ 5.50
*Smokeless mine run....	Boston.....		5.65	5.85	5.75@ 6.00
Clearfield mine run....	Boston.....	2.95	2.50	2.50	2.00@ 2.85
Somerset mine run....	Boston.....	2.95	3.00	3.00	2.35@ 3.75
Pool 1.....	New York.....	2.95	3.25	3.30	3.25@ 3.50
Pool 1.....	Philadelphia.....	2.95		3.50	3.50
Pool 1.....	Baltimore.....	2.95	3.00	3.15	3.00@ 3.25
Pool 9.....	New York.....	2.95	2.80	2.75	2.50@ 3.10
Pool 9.....	Philadelphia.....	2.95	3.00	3.15	5.00@ 3.15
Pool 9.....	Baltimore.....	2.95	2.95	2.90	2.75@ 3.00
Pool 10.....	New York.....	2.95	2.65	2.65	2.30@ 2.60
Pool 10.....	Philadelphia.....	2.95	2.75	2.75	2.60@ 2.75
Pool 10.....	Baltimore.....	2.95	2.60	2.50	
Pool 11.....	New York.....	2.95	2.15	2.20	2.00@ 2.25
Pool 11.....	Philadelphia.....	2.95	2.25	2.00	2.00
Pool 11.....	Baltimore.....	2.95	2.25	2.00	
Pool 71.....	New York.....	2.95	2.85	3.00	3.00@ 3.25
Pool 71.....	Philadelphia.....	2.95		3.00	3.00
Pool 71.....	Baltimore.....	2.95	2.80	3.00	
High-Volatile, Eastern					
Pool 34.....	New York.....	2.50	2.35	2.00	1.75@ 2.25
Pool 34.....	Philadelphia.....	2.50	2.20	2.15	2.00@ 2.25
Pool 34.....	Baltimore.....	2.50	2.15	2.05	
Pittsburgh mine run....	Pittsburgh.....	2.35	2.25	2.25	2.00@ 2.50
Pittsburgh s&d gas.....	Pittsburgh.....	2.35	2.85	2.85	2.75@ 3.00
Kanawha mine run.....	Columbus.....	2.70	2.25	2.35	2.35
Midwest					
Kanawha lump.....	Columbus.....	\$2.95	\$3.75	\$3.25	\$3.35
Hooking mine run.....	Columbus.....	2.50	2.15	2.25	2.25
Hooking lump.....	Columbus.....	2.75	3.65	3.40	3.25
Pitts. No. 8 mine run....	Cleveland.....	2.35	2.35	2.25	2.00@ 2.35
Pitts. No. 8 lump.....	Cleveland.....	2.60	3.65	3.50	3.25@ 3.50
South and Southwest					
Franklin, Ill., mine run..	Chicago.....	2.35	2.65	3.40	3.25@ 3.50
Franklin, Ill., lump.....	Chicago.....	2.55	3.75	3.55	3.45@ 3.65
Central Ill., mine run....	Chicago.....	2.35	1.85	2.25	2.00@ 2.50
Central Ill., lump.....	Chicago.....	2.55	2.60	2.85	2.75@ 3.00
Ind. 4th Vein mine run...	Chicago.....	2.35	2.60	2.65	2.25@ 3.00
Ind. 4th Vein lump.....	Chicago.....	2.55	3.30	3.15	2.75@ 3.50
Ind. 5th Vein mine run...	Chicago.....	2.35	2.40	2.50	2.25@ 2.75
Ind. 5th Vein lump.....	Chicago.....	2.55	3.05	2.75	2.25@ 3.25
Standard mine run.....	St. Louis.....	2.35	1.95	1.85	1.90@ 2.00
Standard lump.....	St. Louis.....	2.55	2.60	2.45	2.25@ 2.50
West Ky. mine run.....	Louisville.....	2.35	2.40	2.50	2.00@ 2.75
West Ky. lump.....	Louisville.....	2.60	3.15	3.00	3.05
South and Southwest					
Big Seam mine run.....	Birmingham...	2.45	2.95	2.85	2.70@ 3.00
Big Seam lump.....	Birmingham...	2.75	3.75	3.15	3.00@ 3.25
S.E. Ky. mine run.....	Louisville.....	3.00	2.75	2.65	2.65@ 2.75
S.E. Ky. lump.....	Louisville.....	3.25	3.85	3.55	3.40@ 3.65
Kansas mine run.....	Kansas City...	3.50	4.50	4.50	4.25@ 4.50
Kansas lump.....	Kansas City...	4.00	5.50	5.50	5.50

* Gross tons, f.o.b. vessel, Hampton Roads. Quotations on Pocahontas mine run and West Virginia, heretofore quoted included both Pocahontas and New River and will henceforth be quoted as West Virginia "Smokeless."

† Advance over previous week shown in heavy type, declines in *italics*.

Because of the scarcity of down cargoes resulting from an inactive ore and grain market not much Lake movement is expected to develop until late in May. There is a fair tonnage left over at the Head-of-the-Lakes. Under present conditions the docks see no inducement to stock early. However, some closings for Hocking and No. 8 have been done at \$3.50, perhaps the largest being for the Canadian Northern Ry.—400,000 tons of 3-in. lump.

FOREIGN SHIPMENTS ARE SMALL IN VOLUME

Foreign loadings continue light. March figures at Baltimore were 87,879 tons cargo coal. Total dumpings at Hampton Roads in thirty days of March were 792,883 tons. Coastwise shipments to New England were light and stocks are adequate for some weeks to come at present rate of consumption. All-rail New England movement declined sharply in the week ended March 26. According to the Geological Survey, 2,640 cars were forwarded, compared with 3,006 the week ended March 19.

ANTHRACITE

Production took a further drop in the week ended March 26, when, according to the Geological Survey, 1,564,000 net tons were mined. The observance of Good Friday is thought to have been the principal cause of the decrease of 7 per cent, or 123,000 tons, from the figure for the preceding week. With the announcement of spring price schedules a good movement has started to the Midwest markets, although Boston and other Eastern centers are taking but very little coal. Stocks are heavy, retail price reductions fail to move coal from dealer's yards and no spurt of buying from the producer is expected until late summer.

Lack of orders has closed a large number of independent collieries. Practically all the larger companies are storing steam sizes and both companies and independents are con-

tracting at \$3.50 for buckwheat, \$2.50 for rice and \$1.50 for barley.

COKE

Beehive production for the week ended March 26 was 99,000 net tons—19,000 tons, or 16 per cent, less than the week before. Present rate of output is the lowest in recent years, barely one-fifth of that during the corresponding period in 1920. With but one exception operating at nearly full time, independent operations in the Connellsville region are almost entirely suspended and the Frick plants are down to 20 per cent running time.

Wage reductions of from 22 to 30 per cent on April 1, made by the independents in the Connellsville region, restored the November, 1917, wage scale. Some business is expected to develop with this cut—within the past few days some sales were made at \$3.75 for furnace, which is expected to be the minimum contract figure, while foundry contracts are quoted at \$6.

L. & N. Rates May Be Increased

A hearing will be given jointly by the Southern Freight Rate Committee and the Coal, Coke and Iron Ore Committee to parties interested on Monday, April 11, at the Hotel Sinton, Cincinnati, Ohio, on proposals to revise upward rates on bituminous coal from mines on the L. & N. in eastern and southeastern Kentucky, eastern Tennessee, and Virginia to various points in Ohio, Kentucky and Indiana, and from L. & N. mines in western Kentucky to points in the Cincinnati switching limits, Covington, Latonia, and other Kentucky points. The hearing will also include proposals of revisions of rates from mines on the L. & N., L. H. & St. L., I. C. and branch connections, in western Kentucky, to Louisville. All of the above are in the Central Freight Association territory.

Reports From the Market Centers

New England

BOSTON

Trade Despairs of Favorable Developments in April—Buyers Still Indifferent—Almost No Contracts Being Closed—Anthracite Program Outlined—Retail Demand Extremely Light.

Bituminous—Constant canvass of consumers discloses no signs of encouragement to the trade for April. There are relatively only a few plants that are working anything like full time, and even in such cases there are visible supplies of fuel that will last for several months at the present rate of consumption. It will take an industrial revival or a genuine scare to induce any coal purchasing during the present month for anything more than scattering lots. The City of Boston has closed for some tonnage, but this is water coal from Hampton Roads where special inducement was made in order to move spot cargoes.

Receipts are likely to fall off sharply during the present month. In addition to large numbers of contracts that expired with the old coal year it is understood that New England railroads have

practically suspended shipments for 30 days on all purchases. Reserves are ample for the season and the carriers are so hard up for ready money that the rumor occasions no surprise. The number of mine shut-downs will probably increase, although certain shippers who have coals classified as high as Pool 9 are making strenuous efforts to sell at a basis around \$2.50.

Shippers who counted upon reciprocity from buyers who were well looked after during stress times are not getting their anticipated reward. There is such a spread between contract figures and those made to move spot coal that purchasers cannot justify making seasonal arrangements.

While the Panama bids showed a higher average net return on Hampton Roads coals there was so much of the appearance of concerted action that the quotations are not impressive as a possible background for other contracts. One bid on standard smokeless coal was on the \$3 per net ton basis, but the tonnage offered was not large and it is not impossible new invitations will be issued. In any case, commercial business is still being sought in this market where the return cannot possibly be figured at more than \$3, and the agencies seeking such business are among

those who submitted Panama quotations well up to \$4 per gross ton.

Current quotations on bituminous at wholesale are shown in the Weekly Review. Pocahontas and New River are quoted \$8.25 per gross ton on cars Boston or Providence.

Anthracite—The Philadelphia & Reading Coal & Iron Co., announced a reduction on March 29 of 50c. on egg, stove, and chestnut, white ash, effective April 1. All the prominent producing companies have now issued new prices, with a single exception, and that company has revised downward the rates on its own transportation. Stocks here are so heavy that no spurt is expected until late summer.

Current retail demand is almost nil; the reductions in cities in this territory of only \$1@1.50 does not meet the public expectation, no matter how ill-founded, and the first part of the season is going to be very hard moving certain of the domestic sizes.

Tidewater—East

HAMPTON ROADS

Dumpings Decline—British Strike May Bolster Demands—Strike of Tug Men Hampers Movement.

The coal market showed little change during the last week in March, with dropping off in dumpings and little prospect for immediate revival. Pools 1 and 2 were selling for \$6, with few buyers.

What effect the proposed strike of English miners will have was a source

of speculation during the latter part of the week. South America is expected to increase its business here in case the strike proves serious.

The strike of tugboat captains and engineers, which tied up all sea-going tugs along the Atlantic coast March 23, has continued this week. The trade coastwise has been seriously tied up as a result. Some settlement of the differences of the strikers, growing out of a summary reduction of their wages, is expected soon.

Figures at the Hampton Roads coal piers on March 31 were as follows:

C. & O. piers, Newport News—	
Cars on hand.....	2,874
Tons on hand.....	143,200
Cars dumped, March 1 to 30, incl....	4,650
Tons dumped same period.....	244,399
Tonnage waiting.....	3,700
Virginian Ry. piers, Sewalls Point—	
Cars on hand.....	1,314
Tons on hand.....	65,200
Cars dumped, March 1 to 30, incl....	4,426
Tons dumped same period.....	221,317
Tonnage waiting.....	3,350
Cars on hand outside of pool.....	261
N. & W. piers, Lamberts Point—	
Cars on hand.....	2,650
Tons on hand.....	122,980
Cars dumped, March 1 to 30, incl....	5,132
Tons dumped same period.....	291,895
Tonnage waiting.....	12,500
Cars dumped N. & W. piers outside pools.....	204,187

NEW YORK

Domestic Demand Shows Slight Increase—Steam Coal Situation Stronger—Bituminous Condition Brighter—Contract-Making Slow.

Anthracite—Buying of the domestic sizes has picked up a trifle but it is far from what it should be. Another of the principal companies—Philadelphia & Reading—has announced the usual reduction of 50c. in domestic sizes. With the exception of the Lehigh Coal & Navigation Co. all the big companies have put into effect new price schedules. The large companies are having no trouble moving their stocks.

Independent coals are not moving freely unless concessions are made and most producers are refusing to do this in view of the fact that they expect a much stronger market in the near future.

The closing down of many independent operations has created a healthier condition among the steam coals. The larger companies are taking advantage of the present situation to stock these sizes while the small individual operator is as a rule compelled to find a market for the most of his production. Curtailed production has prevented a further slump in prices. Quotations for buckwheat range \$2.50@ \$3.25; rice, \$2 @ \$2.50, and barley \$1@ \$1.50.

Current quotations for company coals per gross ton at mine and f.o.b. Tidewater at the lower ports, are as follows:

	Mine	Tidewater
Broken	\$7.10@ \$7.75	\$9.71@ \$10.36
Egg	7.10@ 7.75	9.71@ 10.36
Stove	7.35@ 8.10	9.96@ 10.71
Chestnut	7.40@ 8.10	10.01@ 10.71
Pea	5.65@ 6.00	8.12@ 8.47
Buckwheat No. 1	3.50	5.97
Rice	2.50	4.97
Barley	1.50	3.97

Quotations for domestic coals at the upper ports are generally 5c. higher.

Bituminous—There is a tendency to a stronger market. Because of the strike in England some local houses report having received a slightly increased number of inquiries.

The beginning of the new coal year was expected to result in a much stronger demand for spot coals. In fact, it was stated on the first day that quotations had already become stronger.

Operators were not exerting themselves in making new contracts. They cling to the average quotations of several weeks duration ranging from \$2.75@ \$3 for Pool 34, to \$4@ \$4.25 for Pool 1. The fear of railroad difficulties due to the present intention of the companies to cut wages will, it is believed soon result in increased demand.

The large number of idle vessels lying in the harbor is unusual and the bunkering demand is slow. The effect of the order to workers on the coastwise tugs and barges to refuse to accept the wage cut proposed by their employers was not noticeable the end of the week.

The trade was much interested in the bids for furnishing the coal requirements of the Panama R.R. Co., which are printed in another column of this issue.

The general trend of quotations f.o.b. Tidewater for the various grades follows: Pool 9, \$6@ \$6.10; 1 and 71, \$6.10 @ \$6.50; Pool 10, \$5.85@ \$6; Pool 11, \$5.25@ \$5.50. Spot quotations f.o.b. mines show slight variation as reported in the Weekly Review.

PHILADELPHIA

Anthracite Prices Reduced—Consumers Expecting Still Lower Prices—Bituminous Unchanged—Trade Extremely Quiet—Interest in British Strike.

Anthracite—New mine prices have deeply stirred the trade this week. Despite frequent statements that they did not anticipate a reduction, the biggest producing company announced a cut on all domestic sizes of 50c. Steam prices remain unchanged. No announcement has been made as to what prices may be after this month, but the intimation is that a 10c. a month advance will become effective on May 1. Up to this time the only other big company still adheres to its policy of not making any spring reduction.

Yards are now filled with high-priced coal. In the face of the reduction the retailers felt it incumbent upon themselves to reduce their prices and in addition to the 50c. taken off by the producers they have cut their gross margin another 75c., making the general run of retail prices as follows: Egg \$13.50, stove and nut \$13.75 and pea \$11. Based on present company prices, dealers are now working on a gross margin of \$3.47 on stove and nut and \$2.65 on pea, but as nearly all their coal was bought at higher prices some of them are due to suffer considerable loss.

Independents quickly followed with reductions, although most of them are still 10@15c. higher than company coal

on all sizes except pea, which can actually be bought for less. In some instances pea has been sold for \$5. Dealers who have been actively soliciting business have discovered that the public is not anxious to buy, as they take the stand that further reductions are bound to come.

Both company and independents are closing contracts at \$3.50 for buckwheat, \$2.50 for rice and \$1.50 for barley. Based on company circular, the mine prices per gross ton for line and f.o.b. Port Richmond for Tide are as follows:

	Line.	Tide.
Broken	\$7.25	\$9.95
Egg	7.25	9.95
Stove	7.55	10.20
Nut	7.55	10.20
Pea	5.90	8.30
Buckwheat	3.50	6.00
Rice	2.50	5.00
Boiler	2.00	4.40
Barley	1.50	3.90

Bituminous—The trade continues absolutely colorless. The consumer is staying strictly out of the market until compelled to come after sufficient coal to keep going. It is the exception for any one to buy fuel for stock. The price range continues from \$3.50 for the best down to \$2 for ordinary coals. Quotations for pools as noted last week are still effective.

In the export trade there is just the least flicker of renewed interest due to the strike in England. As yet we know of no inquiries on this account, although it is full of possibilities for the entire soft coal trade.

Coke—Recent quotations have been \$5.65 for 72-hr. and \$4.50 for 48-hr.

BALTIMORE

British Strike May Boost Export Inquiry—Spot and Contract Offers Are Low—Hard Coal Retail Prices Drop.

Bituminous—Effect of the British coal strike on the domestic market is awaited with interest. Before the actual walk-out a line of inquiry had developed here, especially from some European points that have recently relied almost entirely on British coal, which was apparently largely due to the prospect of strike.

The consumers who usually come in at this season for contracts over a half or the whole year are still out. Even in the spot market they buy lightly. About the only contracting of extent has to do with short-term deliveries, the price being a little in excess of the spot market and considerably less than the prices quoted over the year.

While some of those controlling best steam coals are still demanding \$2.85 @ \$3, much is offering \$2.50@ \$2.75. On short contracts the prices are \$2.75@ \$2.85 in many cases, while for over the year the larger producers are sticking on the surface to prices around \$3.75 @ \$4, but are undoubtedly offering in some cases as low as \$3.50@ \$3.60. Export movement continues light, although March slightly exceeded February. The total foreign loading here in March was 87,879 tons cargo and 8,975 tons bunker in same ships, as against 84,249 tons

cargo and 9,420 tons bunker in February.

Anthracite—Following receipt here of information concerning the wholesale price of coal produced by "company" sources in April, and approximate schedules from several independent sources, the Baltimore Coal Exchange held a meeting and the following new retail schedule was announced, per gross ton: Hard White Ash—broken and egg, \$14.50; stove and chestnut, \$14.75; pea, \$12 and buckwheat, \$9. Sunbury—egg, \$14.75; stove and chestnut, \$15. Lykens Valley—egg, \$15.50; stove and chestnut, \$15.75. The prices were worked out with the wholesale prices as a basis to allow a gross profit margin to dealers of \$3.

Purchasers will fill out "coal orders" which state that the coal is to be delivered at the earliest convenience of the dealer, the price to be that at time of delivery. A discount of 25c. will be allowed for payment within ten days.

BUFFALO

No Prospect of Early Revival of Bituminous Demand—Few Contracts Made—Anthracite Competition Growing—Lakes Start Will Be Late.

Bituminous—The situation does not change much but if anything the market is a trifle weaker since our last report. It is apparently too early to look for a business revival. The tendency is still to mine more coal than is taken by consumers although actual consumption is now greater than production. This points to a more liberal buying market when heavy stocks have been used up.

The Canadian demand is still weaker as manufacturing seems to have dropped to a new low level. Bituminous prices do not change much. Youghiogheny gas lump is quoted \$3.50, Pittsburgh and No. 8 steam lump, \$3, all mine run \$2.60 and slack \$2, to which add \$2.36 for freight from the Allegheny Valley and \$2.51 from all other districts.

Anthracite—If anything, the situation is too easy, from the standpoint of the city retailer. There is an unusual amount of competition between the distributors and retailers who get their supplies from the standard companies and those who buy independent anthracite.

Loading of Lake cargoes goes on briskly. Three companies are in the list and more than 25 cargoes are now afloat. Tonnage is scarce. This port did not get the usual winter grain fleet to draw from and this has reduced the number of vessels available. However, so far nobody wants to move as other freights are not offering.

Coke—The market is duller than ever. Jobbers are getting no business except from the smaller factories. The smelting season is far from outlined as yet and future conditions are still in doubt. Coke is offered to jobbers, most of it byproduct, on the basis of \$5.25@ \$6 for 72-hr. Connellsville foundry, \$4.25@ \$4.75 for 48-hr. furnace, \$3.75 for stock and \$5.50 for domestic

sizes, to which add \$3.64 to cover freight to Buffalo.

Northwest

MILWAUKEE

Coal Market Reaches Summer Status—Prices Unchanged—Spring Lake Movement to Be Late.

Demand has reached a summer basis, and the greater part of the coal now on hand must perforce become a part of the stock accumulation for the new coal year. The Lake movement is not expected to start until late in April, and then only at a slow pace.

A few anthracite cargoes may be delivered as soon as navigation begins as there are several good-sized loads now afloat in Buffalo. Until iron ore begins to move freely, vessel men will not be inclined to put their boats in commission.

Prices continue unchanged. It is generally assumed, however, that April will bring a drop of at least 50c. in hard coal. Coke is also held steadily, regardless of accumulating stocks.

MINNEAPOLIS

No Interest in Opening Market—Low Prices Fail to Move Dock Accumulation—Slow Start for Lakes Movement.

As the season draws to its weary close, little life or activity is seen. For the current year, no one wants to buy any coal that can possibly be done without. There was a fair tonnage left on the docks on April 1, though the amount on May 1 would be a better time to base a comparison by seasons. The first of March saw 100,000 tons of hard coal as against 137,000 tons a year ago, while of soft coal, there was around 1,190,000 tons of commercial coal against 1,070,000 tons a year ago.

The shipments during March and April will reduce these figures to some extent, for consumption will continue in domestic plants for some time yet, while the industrial situation is using some coal right along. Whatever be the tonnage on hand on May 1, it is very unlikely that it will include any new coal, unless possibly some boats laid up at the lower Lake ports which have been loaded move forward.

There is no sign of interest in the opening market for Eastern coal. It is taken for granted that hard coal will take the customary 50c. decrease effective April 1, and will advance ten cents per month until September. On soft coal, dock men say that figures at which coal is being sold right now are less than the usual outcome of freight and vessel charges, unloading charge and screening. The total would be about \$8.50 at the dock, while dock coal is being sold as low as \$8.

The principal matter is not the price, but when the real demand will set in. The prospect is that the buyers' market will continue. Under such conditions, jobbers do not see any inducement to

stock their docks early. They are inclined to hold back on their own orders until they can see some early chance of moving the coal themselves.

One factor which neither railroad nor coal men ought to ignore is that both are under serious suspicion from the general public. There is a considerable number of the public which hug the delusion of government ownership or at least government operation of the railroads. And if there is an early return of the difficulties of last fall, it does not take much of a prophet to see where congress will be subjected to great pressure to take over the operation of both mines and railroads. The Calder bill is not as dead as it might be, and can readily be revived, if mining and transportation interests do not show reasonable signs of "normalcy."

DULUTH

Accumulated Screenings Hard to Move—Early Harbor Opening—New Dock Wages Under Discussion.

Dock operations continue at the rate of three or four days per week. Recent warm weather has softened the bay ice and it will soon be sufficiently honeycombed to allow the passage of boats in the harbor.

Anthracite stocks are very low. There is a large accumulation of bituminous screenings which are hard to move even at low prices. The present contract between dock operators and electrical workers expires April 30 and a new scale will soon be determined. The operators seem to favor the eight, nine or ten-hour day, whereby the docks would have the option of working ten hours before overtime rates would apply, and during slack times could operate eight or nine hours.

There are many men out of employment at present but not much actual suffering. An early revival of business at the Head of the Lakes is indicated when the active season of navigation arrives.

Inland West

CHICAGO

R.R. Buying Hampered by Lack of Funds—Some Pocahontas Contracts Made—Heavy Anthracite Buying.

With a large number of factories down and the present amount of unemployment it is easily understood why there is so little demand for coal. A few railroads have already placed their contracts but in some cases other roads are planning to purchase on the open market until about the middle of July. This of course will mean that at the slightest sign of a shortage they will rush into the market and another unfortunate scramble for coal will result.

Railroads are hard pressed for money. Operators supplying some roads have had to borrow in order to meet their own payrolls, at the same carrying the

roads for coal shipped as far back as last October. A quick solution of the railroad problem will be of help to the whole country let alone to the coal operators.

Some Pocahontas mine run contracts have been made recently, prices ranging \$3.50@\$.4. Southern Illinois operators have not submitted to the domestic trade any contract propositions, but instead are offering orders for 25 or more cars, to be shipped during the season, strictly on a basis of market price at time of shipment. Those who are financially able to do so are now concentrating on anthracite as April prices are lower than at any other time during the year.

DETROIT

Sales Are Still Far Short of Normal, Though Jobbers Report a Slight Increase—Anthracite Stocks Heavy.

Bituminous—Little improvement is apparent in the buying demand for either steam or domestic sizes. In view of the restricted demand, the trade is adhering to a policy of waiting for the development of better conditions. Signs of improvement in the industrial situation are not lacking, but the process is proceeding more slowly than many had expected. While factories are resuming operation, their production is greatly curtailed and their consumption of coal is correspondingly reduced. Some jobbers believe that the depletion of reserves is not being offset by the quantity of bituminous being brought into the city. They look for a substantial increase in buying in the near future and feel that the stability of existing prices is likely to be maintained. Smokeless lump and egg is quoted at \$6, mine run is \$3.75 and nut and slack \$2.25. Kentucky or West Virginia 4-in. lump is \$4, 2-in. lump \$3.75, egg \$3.50, mine run \$2.75 and nut and slack \$2.25. Ohio lump is \$3.50@\$.3.75, mine run \$2.50@\$.2.60 and slack, \$2.25.

Anthracite—Many dealers now find their yards are holding considerable stocks, while demand is lacking and mine price reductions handicap their efforts to dispose of stock purchased at winter prices.

CINCINNATI

Contract and Spot Markets Inactive—Prices Are Firm—Distress Coal at Minimum.

Contract business is at the lowest ebb that it has been in years and current demand is practically nil. Prices, however, have not shown any inclination to seek a lower level. There is a smaller amount of coal on wheels than for some time with a minimum of fuel in distress in the yards.

April circulars will obtain on Pocahontas and New River. Lump is scheduled to sell \$4.75@\$.5. Run of mine is \$3.50 and the same is being asked for slack. On the latter, however, there is some disposition to cut, and deliveries are promised by several of the companies as low as \$3. Kentucky and West Virginia bituminous prices about

on a par with lump at \$3.25, mine run \$2@\$.2.25 and slack \$1.75@\$.2. Some special lines of byproduct and gas coals are bringing a little in excess of this.

Retailers are not disposed to make much change in their schedules. With the opening of April \$10.50 is asked for Pocahontas lump and \$8 for mine run. One firm has cut this latter price 25c. Bituminous lump is held at \$8, mine run \$7 and slack \$6.50@\$.6.75.

CLEVELAND

Retail Prices Weakening—Slack Firm and Demand Stronger—Operators Seek Rates Adjustment.

Bituminous—Methods of equalizing the freight cost from mines to the lower Lakes docks and to win re-adjustment of rates in order to give the Ohio, Pennsylvania, West Virginia and other Eastern producers better chances in competing with Illinois operators were discussed in a meeting in Cleveland a few days ago, as outlined elsewhere in this issue.

In consequence of the 1920 freight increases present rates from mines to docks range from \$1.83 to \$2.11. On top of this charge, shippers by water are paying the highest vessel rates on record. Operators are under a severe handicap because of the enormous freight charges in competition with the Illinois producers all-rail coal.

Production is running 44 per cent of capacity, showing a slight gain over the preceding week. Some seasonal resumption of industrial activity is expected to bring out better demand. The call for slack continues fairly active with prices firm.

Anthracite and Pocahontas—A mine reduction of 50c. a ton by anthracite operators has just been reflected by a similar drop in retail prices. A new development in the hard coal market is the spread which has returned between egg and grate, and stove and chestnut sizes, the latter two being sold for 25c. a ton higher than the first two. Pocahontas mine run has dropped about 25c. with some dealers delivering for as low as \$9.25. There has been no change in the shoveled lump quotations, but substantial reductions in all retail prices are forecast by some dealers by the middle of the month. This will be forced by the existence of large stocks, and the waiting attitude of consumers.

Receipts of bituminous coal at Cleveland for the week ended March 26 amounted to 928 cars; industrial 724, retail 204; as compared with 917 cars the previous week.

COLUMBUS

More Optimistic Feeling Prevails—Late Lakes Opening—Railroads Ask for Contract Bids.

There is a better feeling shown in most quarters, probably the result of expectations for better business with the opening of the Lakes. As far as immediate business is concerned there is scarcely any increase from any source.

The screenings situation is now attracting attention. At present they are fairly weak, although with a reduced production of lump there has been very little oversupply. But with a large proportion of Lakes vessels loaded, little lump is expected to be made during April and this will stiffen the market for slack. But with the opening of the Lakes season, fixed at May 15, screenings are expected to be a drag on the market.

Domestic trade is slow and there is little hope of improvement in the immediate future. Retail prices are steady at former levels. Hocking lump is \$7.25@\$.7.75, mine run \$5; West Virginia splints sell \$8@\$.8.25, and Pocahontas lump \$10.

While some steam plants are working fuller time others are reducing their operations and the net result is unchanged. Railroads are asking for bids for fuel during April but so far there are few contracts made. Hocking bids for railroad fuel run \$2.75@\$.3, while those in the West Virginia fields were slightly higher. Little contracting for steam tonnage is reported.

ST. LOUIS

Storage Prices May Stimulate Buying—Shortage of Steam Sizes Increases Price—Eastern Coals in Poor Call.

Colder weather last week, while only temporary, cleaned up the yards and was the occasion of a little ordering of domestic sizes. April prices are expected to move more coal and this will be stimulated by an advertising campaign in the daily newspapers.

Anthracite and smokeless prices, as well as Arkansas will make these grades practically prohibitive in the Middle West this season. Indications are that coke will be one of the big factors and will even crowd Cartersville coals. St. Louis retail price for gas-house is \$9.25 and byproduct \$10.

Steam business is unusually good but only on account of the fact that more mines are closing daily and it is the scarcity rather than demand that has caused the increased price. Mine run is not affected. Neither Standard nor Mt. Olive is expected to be much of a factor in the early storage of coal. April prices for Mt. Olive are \$2.75 on domestic sizes for St. Louis and \$3@\$.3.25 for outside territory. Other prices are shown in the Weekly Review. The Cartersville situation looks promising for early storage.

South

LOUISVILLE

Active Discussion of Contract Prices, but Few Closings—Lakes Trade May Furnish Needed Screenings.

Screenings are stronger in price and in small supply. However, it is believed that Lakes demand will result in more coal being screened, and better supplies will be available. In the meantime this condition is forcing better prices for mine run.

Operators are figuring on annual contracts from a basis of \$3.50 for eastern Kentucky coal. Consumers on the other hand believe mine run will go as low as \$2 this summer, and are holding off. It is reported that some contract business has been done under an average of \$3.50 a ton.

It is said that many operators are driving new entries and getting ready for big production later on, selling entry coal at approximately cost, figuring that they will have to get much better prices later on, especially on contracts, as the present dull demand for fuel must be nearing an end. Spot prices are shown in the Weekly Review.

In view of the general reduction of existing stocks during the period of dull demand it is the belief of the trade that things are bound to show an improvement shortly. Retail business is very dull.

BIRMINGHAM

Domestic Market Shows Some Activity—Steam Coal Is Still a Drag—Production at Low Level.

Aside from a slight improvement in the domestic inquiry following the quotations for the beginning of the new coal year, there is nothing new in the market situation. Dealers are beginning to get a line on their needs and some contracts have been booked for deliveries through the spring and summer, and some sales have been made with a year's spread.

Big Seam lump is being quoted for April at \$3.25; Carbon Hill \$3.75; Cahaba and Black Creek \$4.50@\$5.00; Montevallo \$6.50. There is strong probability of a shortage of domestic coal for the year, as there is very little prepared coal available from the steam producers, from which source probably 50 per cent of the coal for domestic use has to be drawn, as there is practical stagnation in the steam market and commercial mines are operating one and two days per week.

Steam users are still disinclined to enter the market and sales are confined to small spot lots. The only class of industries which have yet resumed operation are pipe plants, which have not been under way long enough to stimulate the raw material market as yet. Following resumption of production at the Mulga and Dolomite coal mines of the Woodward Iron Co., that corporation has blown in a furnace and will consume considerable coal and coke and bring about steadier operations at its mines. Quotations are without any material change.

Southwest

KANSAS CITY

Buyers' Strike Piling Mine Costs—Shortage Inevitable.

A trip to the North and Northwest discloses very unsatisfactory conditions. It seems almost hopeless to induce coal

users to begin putting in a supply before it is too late and a real shortage next winter is almost inevitable. Users of dock coal are holding off expecting reduction in freight rates. When these rumors have been run down in no case have they emanated from any reliable source but instead seem to be only the general outgrowth of a desire for reduction in rates.

The buyers' strike is piling up costs at the mines for which the public ultimately will have to pay. Colder weather last week resulted in a temporary increase in retail deliveries. Arkansas lump is \$6, mine run \$4.50, slack \$3.50; Kansas lump is \$5.50, nut \$5, mine run \$4.25@\$4.50, mill \$4, slack \$3.75; north Missouri lump is \$4.50, mine run \$4, washed slack \$4.05, raw slack \$2@\$3.15.

West

DENVER

Price Cuts Cause Uncertainty Over Storage Situation—Competition Growing.

Considerable uncertainty exists among both operators and retailers concerning the outlook for the storage season dating from April 1. Retailers were expecting to get \$11 for April bituminous lump and the action of the retail department of the Colorado Fuel & Iron Co. in delivering this during April and May for \$10.50 has upset their plans. The company's price was based on \$5.50 f.o.b. mine, after some of the other

operators had decided on \$5.65 for April and \$5.75 for May.

Their price of \$11, on the other hand, meets the figure of a Routt County coal that is sold by a newspaper as a side line and which had something to do with disarranging the unanimity of storage prices by underselling in March.

In buying coal on a smaller gross margin retailers are further disturbed over the reported reductions in freight rates, thus far unfounded when run down to their supposed source.

TORONTO

Business Remains Quiet—Retail Prices Lower—Office of Provincial Fuel Controller Abolished.

Business continues decidedly quiet at present, with retail prices lower. Yards are well stocked for the season. The office of Provincial Fuel Controller has been abolished from April 9. H. A. Harrington, who has held the position for the last three years, states that he does not know whether it is intended to completely abandon the principle of supervision of the provincial fuel supply. In his opinion it will be necessary to retain it in some form for the next ten years and should next winter prove a severe one, Ontario will face a serious situation.

Quotations for short tons are as follows:

Retail	
Anthracite egg, stove, nut and grate....	\$15.50
Pea	14.00
Bituminous Steam	11.00 @ 11.75
Domestic lump	12.50
Cannel	16.00
Wholesale f.o.b. cars at destination	
3-in. lump	8.00 @ 9.00
Slack	6.50 @ 7.00

News From the Coal Fields

Northern Appalachian

ANTHRACITE

Many Independents Closed—Steam Going to Storage—Production at Low Point.

Operators are optimistic that the next sixty days will see an adjustment of present unsatisfactory conditions and that production will return to normal. Lack of orders has caused fully 90 per cent of the independent collieries to shut down, with many "no bills" on track. Practically all the larger companies are storing steam sizes but are shipping all their domestic on a ready market to the Lakes and Western points.

The strike situation at the Pennsylvania Coal Co. collieries has eased up considerably and the men at the Butler Colliery have returned to work. For the present it seems as if production has reached its lowest point, touching 1,564,000 net tons the week ended March 26, affected by Easter Week.

PITTSBURGH

Production Not Materially Changed—Expiration of Contract Year Makes Little Difference in Market—Wage Matter May Be Opened.

There is only a slight sagging tendency in the rate of coal production. The ending of the coal year, with expiration of many contracts, has made less change in the market than was expected, as the volume of spot buying has not materially increased, and the inference is that special arrangements have been made between producers and consumers for shipments to be continued at prices to be adjusted weekly or monthly.

There have been no definite prospects of late that the wage matter would be re-opened by the miners becoming willing to modify the scale, but something may now develop along this line since the recent wage reductions in the Connells-ville region. This may transfer enough coal business to the Connells-ville region to cause union miners to consider the matter of a wage revision. Along this line it is to be noted

that since the Connellsville wage reduction became an assured fact \$2.75 or less for Connellsville gas coal for Lakes shipment has been quoted, a lower price than would be named in the Pittsburgh district. The spot market continues irregular, but without quotable change, and is shown in the Weekly Review.

CONNELLSVILLE

General Wage Reduction by Independents—Contract Furnace Coke Selling at \$3.75.

Operators who had previously made wage reductions and others who had not, seem to have gotten together with a view to uniformity. Notices were quite generally posted by independents at the close of March announcing a new wage scale to go into effect April 1, which is in substance the scale of Nov. 10, 1917, about 30 per cent below the scale paid since last August. Some operators whose plants are idle did not take formal action, while the "leading interest," the Frick Coke Co., has done nothing.

For the first time in many weeks there has been important business done in furnace coke. Before the latest advance was definitely scheduled a contract was made with Perry furnace at Erie, about to blow in, for 10,000 tons a month over the second quarter of the year at a price stated to be between \$4.25 and \$4.50. Within the past few days a sale was made at \$3.75, based on the new wage scale, 500 tons a day to a furnace at Portsmouth, Ohio, about to blow in and requiring Connellsville coke for five or six weeks until it can put into operation its byproduct coking plant. Spot furnace had previously been quoted \$4@4.50, but with the wage reduction will hardly bring more than \$3.75 in case demand arises. Foundry shows a shade more activity in the spot market, this being attributed to more foundries depleting their stocks. We quote: Spot furnace, \$3.75@4; contract, \$3.75@4.25; spot foundry \$5@6; contract, nominal, \$6.

The *Courier* reports production in the week ended March 26 to 29,450 tons by the furnace ovens, and 24,520 tons by the merchant ovens, a total of 54,020 tons, a decrease of 14,480 tons.

EASTERN OHIO

Lakes Loading Provides Stimulus to Production—Light Cargo Movement Seen—Increasing Contract Inquiries.

Production during the week ended March 26 amounted to 287,000 tons, a slight increase over the preceding week. The Pittsburgh Vein Operators' Association reported their mines working 38 per cent of possible work-time with production at 47 per cent of the rated mine capacity. Production was stimulated by Lakes shipments and as all available tonnage at the lower ports has now been loaded or is in the process of loading, this stimulus will presently disappear.

Because of the scarcity of down cargoes, resulting from the inactive ore

and grain trade, not much movement of coal up the Lakes is expected in the near future. Railroad fuel production fell below 50 per cent of the output for the first time in some weeks. Carriers' requirements have decreased materially with lighter traffic. Industrial concerns are making contract inquiries, but few if any agreements are actually being consummated. Retailers must contemplate on immediate reduction in delivered prices if the present sluggish domestic market is to be relieved. Spot prices are firm and are quoted in the Weekly Review.

The Canadian Northern Ry. has closed contracts in the eastern Ohio and Hocking fields for 400,000 tons of 3-in. lump, delivery via the Lakes. It is understood some additional Lakes contracting has been done on this grade around \$3.50 per ton.

CENTRAL PENNSYLVANIA

More Mines Closing—Business Flat—Warning of Impending Shortage.

Production continues at a low ebb with every prospect of still more mines closing. Business is as flat as it can get and operators assert that with the present scale of wages there is nothing to do but close.

Coal operators hesitate to advise buying for future needs in view of what occurred last year when such a campaign was put on when the demand greatly exceeded the supply and prices went sky high. However, conditions are entirely different now and operators predict an enormous call by fall, at which time production is bound to fall below the demand. Coal consumers will not buy a pound of coal beyond their present needs and insist upon wiring orders for every shipment.

UNIONTOWN

Coke Operations Near a Complete Suspension—Coal Production Further Curtailed by Failure to Renew Contracts.

With independent operators, W. J. Rainey alone excepted, almost entirely suspended and the Frick company down to 20 per cent at its coke plants, the region is now more nearly in a state of complete suspension than at any time for many years.

The market situation accurately reflects the operating phase of the industry. Coal contracts expiring April 1 have not been renewed and this additional development will further curtail output although in the aggregate the contract to tonnage from this region does not run up to a very high figure. Spot steam is quoted \$1.75@2. Byproduct is \$2.25@2.75 with little activity.

The coke market is virtually non-existent. There was one inquiry this week for a 15,000-ton purchase with delivery at the rate of 500 tons per day. The inquiry was reported covered at \$4.50. Other odd-lot sales were made at the stationary figure of \$4@4.50. Foundry coke is unchanged, \$5@5.75.

Operators inquiring from railroad purchasing agents regarding contract

renewals have been given vague answers and there is little expectation here that any large coal contracts will be placed before May 1 at the earliest.

FAIRMONT AND PANHANDLE

Market Shows Better Tone—Contract Buyers Active, but Few Closings Reported—Lakes Inquiries Appear.

FAIRMONT

A better tone to the market has disclosed the fact that consumers are getting ready to place orders. However, this has not passed the stage of feeling out prices. Under such conditions very little coal was sold during the week ended March 26. Railroads were seeking coal on new agreements at \$2.75, but producers appeared to be holding out for a \$3 price, especially as the vacating of Service Order 18 relative to the practice of assigning cars has made railroad fuel contracts less desirable than usual.

NORTHERN PANHANDLE

With the exception of a better volume of railroad fuel, but little coal is being loaded. The spot market has completely disappeared and contract movement is at a minimum. Inquiries for Lakes tonnage are being received.

Middle West

MIDWEST REVIEW

Buyers Unable to Finance Stocking Program—Future Orders Being Placed—Warnings of Impending Shortage.

While there has been no actual change in the present market, one begins to see some rifts in the clouds. A tour of the Middle West discloses that the large majority of buyers agree that this is the time to secure coal, which probably can be purchased cheaper than 60 or 90 days hence. The main trouble appears to be lack of ready money. This situation is true of the domestic market as well as the steam trade, although many dealers are placing larger orders for delivery during the summer. The wise operator is taking such business only at market price at time of shipment.

Railroad men of national reputation as well as representative coal men are going out of their way to warn the public of what will happen unless more orders are placed now, but buyers appear to be in a helpless position and are either unable or unwilling to stock coal. One large utility company recently placed a substantial order under peculiar circumstances, as the operator had to agree in return for making prompt shipments, to carry the account well into September, this to draw interest at 7 per cent thirty days after shipment.

Rumors of an attempt to reduce wages are losing rather than gaining credence because the average miner is hardly being given an opportunity to make a bare living. Under these circumstances it would be folly to attempt

to reduce mine wages. A prolonged tie-up of the British mines would result in making the situation next winter far more serious and it looks today as if conditions are to be pretty bad as it is.

A number of large operators have sent out circular letters calling attention to various pertinent facts showing that we are headed for a coal shortage, usually stating in plain language that they have given the warning and if it is not heeded they will not be responsible for what happens later in the season. As a whole, the public is taking these warnings seriously but a great many others are considering it only a clever sales propaganda. Some of the latter are due to have a very rude awakening early in October if not before.

SOUTHERN ILLINOIS

Screenings Call Active as Domestic Production Drops—Slack Time Causing Discontent Among Miners—R.R. Contracting.

Stronger domestic demand from the Northern market and a growing call for steam coal increased production slightly in the Cartersville field during the week ended March 26. However, this is only temporary and while it is hoped that the April movement of domestic sizes will be good much will depend on the temper of the buying public. Any stimulus to the domestic trade will relieve the heavy call for steam sizes, caused by failure to work on account of the oversupply of domestic coal.

Duquoin field conditions are unimproved and there is some discontent among the miners on account of poor working time. Mt. Olive conditions are slightly improved, with screenings in good demand and offerings light. Mine operations were limited to about two days.

Of the seventy odd mines in the Standard field, one-third are now idle and another third are running less than two days a week. Nothing indicates that conditions will improve for some time unless it be in the steam sizes. The shortage of screenings is more noticeable with stiffer prices and several mines with crushers are now breaking up mine run in order to take care of screenings contracts. Railroad tonnage is unusually light. Some big roads, including the Frisco, are expected to award their contracts early in the month.

WESTERN KENTUCKY

Steam Sizes Becoming Scarce with Low Domestic Production—Prices Well Maintained—Contract Market Active.

Demand for pea, slack, or nut and slack during the past few days has been greater than production, resulting in better movement of mine run, as screenings are getting steadily scarcer with the smaller production of lump coal.

Some contracts are now being reported, although in most cases operators are holding off and quoting prices 25 to 30 per cent over spot prices. One

prominent operator reported that he knew of some contracts quoted at \$2.50 for mine run; \$2.25 for screenings; and \$2@\$.25 for fine screenings. There have also been some fine screenings contracts made at \$1.70; nut and slack at \$2.

Present spot prices are fairly well in line with last week's average.

Middle Appalachian

HIGH-VOLATILE FIELDS

Increased Interest Shown by Buyers—Spot Market Not Yet Improved—Production Still Low

KANAWHA

Slim production during the week ended March 26 reflected poorer market conditions than so far witnessed during the year. Mines running at all were limited to about two days. Spot sales were negligible, with mine run being quoted \$2@\$.25 and prepared sizes were equally hard to move. New contract business was not developing to any extent, buyers still holding off because of prices.

LOGAN AND THACKER

Although production in the Logan region was not over 25 per cent, the output was in excess of recent production figures. This was traced to a few large consignments to Tide, and to slightly increased shipments to Detroit automobile manufacturers. Spot sales were at the minimum, although inquiries were becoming more numerous. However, little business was resulting from such quotations made.

There was a slight gain in Williamson production but the output was not much over 30 per cent of potential capacity, with few mines working more than two days. Industrial conditions were quiet, no plants having been attacked following the Matewan trial. There was an almost complete lack of demand either for contract or spot coal.

NORTHEASTERN KENTUCKY

Mines were not operating more than two days, but a production of 20 per cent represented a slight gain over the preceding week, with only a few companies participating in such production. The decreasing demand for prepared coal has made mine run and steam sizes a little firmer. Contracts have not yet passed the gossip stage. The prospects are that contract figures will be about 25c. in excess of prevailing spot prices.

LOW-VOLATILE FIELDS

Demand Unimproved, Although Inquiries Are Increasing—Contract Closings Are Few—Better Tone to Future Market.

NEW RIVER AND THE GULF

There was no perceptible improvement in the Winding Gulf output during the week ended March 26 nor were producers sanguine of any early improvement. The market was extremely

draggy. There was not quite so much coal at Tide, although this has not resulted in any resumption of shipments. There were no new developments in the contract situation, the end of the coal year finding that market inactive.

Steady gains in production reflected a wider market for New River coal, Southern mills affording an additional outlet. Demand for bunker coal was also on a larger scale. Spot sales were increased, mine run going at \$3.50, which price also prevailed in the making of some new contracts.

POCAHONTAS AND TUG RIVER

Coal loadings in the Pocahontas region were somewhat short of 190,000 tons, with mines averaging only about two days during the week. Inquiries were becoming somewhat more frequent, although evidently only for the purpose of feeling out prices. Despite the end of the coal year, the contract market was extremely sluggish. Tide-water and Western business was also at a low ebb.

Tug River mines for the most part were marking time, the output remaining slightly under 60,000 tons. A further number of inquiries gave producers the impression that buyers had at last reached the stage of active contract interest, although but few actual closings for the new coal year were made.

Southern Appalachian

SOUTHEASTERN KENTUCKY

Production Still Dropping—Lakes Offers Are Unattractive—Special Terms Fail to Encourage Buying.

Production is dropping more each week on account of no orders. Larger mines, which have been running five days until last week are now reduced to a three-day basis. Inquiries are beginning to come in for Lakes tonnage but prices offered are such that do not warrant any acceptance.

Spot quotations are \$3.75 for block, \$3 for egg and mine run and \$2.25 for slack. It is next to impossible to move any domestic and all orders are hard to secure, although large producers are offering 90-day terms at present for stocking purposes.

West

UTAH

No Demand in Any Market—Hope of Price Cut Affects Retail Buying.

Production is still below 50 per cent, some producers reporting as low as 35 per cent. But little demand exists in any quarter; retailers are inclined to buy from hand to mouth, owing to weather conditions and their belief in the possibility of an early price decline. Industrial plants are still doing very little. Utilities are consuming a large proportion of the present curtailed output.



MINE And COMPANY NEWS



ALABAMA

The Manchester Coal Co. has been organized in Walker County and will mine coal from the Jefferson seam near Manchester, the overburden being removed by use of steam shovels. A spur track is now being built to connect with the Alabama Central R.R. at Manchester and a number of tenement houses are also in course of construction. Dr. Blanton, of Saragossa, Ala., and Messrs. Kilgore and Philbuck, of Jasper, Ala., are the promoters of the new development.

COLORADO

The Victor-American Fuel Co. is maintaining its force at the six mines located in the Routt, Canon City and Walsenburg fields of Colorado, although a part-time basis is necessary. Replacement work, however, is keeping many men at work that otherwise would be laid off, the total betterments and improvements approximating an expenditure of about \$25,000. Heavier rails are being put down in the Trinidad field, coal tipples in all the mines are being overhauled, and provisions are being made for the accommodation of 100 additional pit cars in each of the six mines.

ILLINOIS

The work of opening the Kathleen mine at Dowell is now progressing slowly but steadily under the direction of Robert Medill, director of Mines and Minerals of Illinois. After completing the air lock over the air shaft the cage which was under the concrete seal, was hoisted high enough so that the top of the cage cracked the concrete. Helmet men then entered the air lock and proceeded to open the shaft. It was discovered that the fire had cooled down more than was expected and the men immediately went down to the bottom. After establishing a fresh air station on the bottom, by erecting several stoppings, the work of advancing in toward where the seven bodies are located was commenced. Stopplings were necessary every 500 feet. Besides many state mining men, there are also several Federal men at the mine making tests and assisting in the work.

Hoisting a total of 3,375 tons in eight hours, the Southern Coal, Coke & Mining Co., at New Baden, recently broke its hoisting record. The mine is about 365 feet deep. Actual hoisting time as recorded was 6 hours, 58 minutes and 48 seconds.

The Scott Smith Coal Co., of St. Louis, operating an extensive strip mine near Duquoin, has unexpectedly ceased operations for an indefinite period. It is not known if the suspension was made for repairs during the slack season, however the larger portion of employees were sent home until further notice. The company has the largest shovel in operation in the state.

The Colfax Citizens Coal Co. has been incorporated with capital of \$50,000. The company has leases upon eighty acres of coal lands.

The Old Abe mine, owned and operated by the Kanawha Fuel Co., at Duquoin, has closed down indefinitely. Like many other mines, during the slack period, the company intends to make repairs and general improvements during the shutdown. The mine was formerly operated by the Jupiter Coal Co., and was purchased during the war by the present owners.

The Kuhn Coalery Co., at Dubois, has again suspended operations for the time being. The mine was idle several weeks ago when repairs were being made. Other repairs will be made at this time.

A new rescreening plant is being installed at Mine No. 5 of the Taylor Coal Co., at Freeman. This with other additions to their present equipment, is expected to almost double the capacity of the mine.

INDIANA

The Tidewater & Western Coal Co. has bought 2,000 acres of coal land east of Spurgeon, in Monroe township, seven miles from the Big Four R.R. A railroad, on which surveyors already have started work, will connect with the Big Four at a point near Somerville. Big stripping operations will first remove all the surface coal and later deep mines will be sunk. The new company is composed of B. W. Lewis, of Wheeling, W. Va.; R. D. Lloyd, of Steubenville, O.; Loris Julian, of Evansville, and H. W. Eakin, Indianapolis. An average of \$125 an acre was paid for the property.

The City Coal Co.'s mine at Jasonville has been closed because the supply has exhausted in the mine. It has been in operation for several years. Tearing down of the machinery and work of cleaning up the mine are now under way.

Plans for a large mine near Newport, by the Newport Coal & Mining Co. at the location where coal was recently struck are rapidly progressing. The company is making extensive plans for a modern mine with homes for the miners. The homes will be owned by the miners and monthly payments deducted from their wages. Coal was struck at 107 feet. Judge B. S. Aikman, of the Vermillion circuit court, is one of the large stockholders in the new company.

KENTUCKY

The Blue Diamond Coal Co., operating on First Creek below Hazard, has closed deals for 5,000 acres of coal land on Lost Creek, adjacent to the present holdings of the company, with plans for extending developments.

The West Kentucky Coal Co., has completed its new \$50,000 towboat, which is now being placed in commission. The company is doing about \$80,000 worth of barge work on its own marine ways.

The McComb Supply Co., Jellico, Tenn., has filed suit against the Sun Coal Co., Louisville, for a mine in southeastern Kentucky, for \$279.90 alleged to be due on account.

MINNESOTA

Lignite coal in open top cars was used to smuggle cases of whisky from Minot, N. D., to Minneapolis. Several cases of liquor were taken from cars, when placed upon a siding at small towns near the city.

The State Board of Control is securing prices on a supply of coal for the coming season from Indiana and Illinois mines.

The Minnesota house has passed a bill requiring wholesale coal companies to screen coal of impurities, with a limit of not to exceed 12½ per cent of foreign matter.

MONTANA

Declared to be the largest business transaction this year, the McClure interests, with John W. McClure, president of the Nelson Coal Co., of Great Falls, as principal stockholders, recently purchased all the holdings in the Nelson Coal Co., according to R. K. West, director of the company. These shares include the holdings of Schuyler Colfax of New York City and make the McClure interests one of the most valuable coal properties in northern Montana.

A \$5,000,000 corporation to develop 175,000 acres of coal and oil lands leased on the Flathead Reservation, and to generate electric power from the Flathead River for this project, and for the electrification of the Northern Pacific, is being formed by United States Senators Reid Smoot of Utah, Warren Worth Bailey of Texas, and Penn-

sylvania capitalists. The leases run for ten years and the water-power site lease obtained from the Government is for 99 years.

NEW JERSEY

T. B. Koons, vice-president and freight traffic manager of the Central Railroad of New Jersey, has announced that M. & J. Tracy, Inc., has assumed the towing service to and from the Central Railroad Pier 18, Jersey City. The charge for the service is not to exceed 10c. per ton, which includes the absorption of the two cents per ton shifting at the pier when the towing service is performed by the towing company. Pier 18 will be operated as an "Open Port" and it will be permissible for any shipper or consignor to employ his own or outside tug-boat service and place boats under the chute. However, if boats are brought to the pier by outside tugs which do not perform the shifting to and from under the chute, a charge of two cents per ton will be made by the towing company for this in and out service.

NEW YORK

Profits of the Island Creek Coal Co. in 1920 were \$2,482,713 after allowing for tax reserves. This, after preferred dividends, was equivalent to \$18.37 a share on the 118,801 shares of common stock outstanding at the close of the year. In 1919 earnings were equivalent to \$7.45 a share and in 1918 \$7 a share. During 1920 the mines produced 1,795,077 tons of coal, an increase of 13,664 tons, as compared with production for 1919.

The Pond Creek Coal Co. for 1920 reported net profits of \$600,916 after fixed charges and Federal taxes, equivalent to \$2.82 a share on the 212,920 shares of capital stock issued. In 1919 net profits were \$207,770, or the equivalent of 97c. a share.

The Elk Horn Coal Corporation reported net profits, after expenses and taxes, for the year ended Dec. 31, 1920, of \$1,404,754, equal, after preferred dividends, to \$4.20 a share, earned on the \$12,000,000 common stock, compared to \$64,587, or 49c. a share earned on the \$6,600,000 preferred stock in the preceding year. Profit and loss surplus amounted to \$1,686,582, as against \$677,417.

The Consolidation Coal Co. reports for the year ended Dec. 31, 1920, a surplus after dividends of \$7,148,565, against \$795,567 in the previous year. Earnings from operations totalled \$33,965,280, contrasted with \$23,507,556 in 1919. Operating expenses, taxes and depreciation, exclusive of Federal income tax, totalled \$26,721,095, against \$18,922,011 in the previous year. Total income was \$12,127,850, compared with \$4,585,545 in 1919, and net income \$10,797,806, compared with \$3,187,372.

OHIO

Bids will be opened May 2 by the Columbus Board of Education for approximately 10,000 tons of two-inch lump coal for the various school buildings under its jurisdiction. It is believed that with the low price of coal prevailing the board can profit by buying its coal earlier than usual.

The Ohio Linwod Coal Co. has been chartered with a capital of \$10,000 to mine coal in the eastern Ohio field. The incorporators are E. C. Fowler, J. F. Rhode, S. J. Thompson, R. M. Ludwig and C. L. Dorer.

The McCoy Bill pending in the Ohio Legislature designed to regulate the distribution and sale of coal, fathered by Representative McCoy of Adams County, will probably be killed in the judiciary committee of the House where it was referred. Through the efforts of B. F. Nigh, secretary of the Michigan-Ohio-Indiana Coal Association, steps have been taken to kill the bill in committee. The main

provisions are to eliminate the middleman in all coal transactions and limit retailer's profit to 30 per cent above the cost of coal plus freight and war tax. The bill also prohibits sale between retailers for profit and also requires an annual report to be filed.

Representative Freeman, of Hardin Co., is the author of a bill which places coal producing and distributing companies in the list of public utilities and seeks to regulate them as such. This would affect every agency in the coal business except the ultimate consumer. This bill is now in the hands of the taxation committee of the House of Representatives where it will likely be killed. W. D. McKinney, secretary of the Southern Ohio Coal Exchange, is aiding in the fight to kill the bill.

The **Clarkson Coal Mining Co.**, headquarters Cleveland, operating mines at St. Clairsville and Fairpoint, will take over the Dungen mine at Dun Glen, in Jefferson County, having purchased the property from the **Morris-Poston Coal Co.**

The **Log Mountain Coal Co.** has consented to slice \$4,628 off the judgment recently given in its favor in the Federal District Court at Cincinnati against the **Interstate Coal Co.** and the **United States Court of Appeals** has affirmed the judgment so modified. This ends litigation between the companies.

OKLAHOMA

The **Consumers Ice & Fuel Co.** has been organized at Muskogee, and charter has been filed in the office of the secretary of state. The company will conduct a general ice and coal business in Muskogee. The company is incorporated for \$50,000, and the incorporators are: H. W. Gibson, E. L. Semple and W. T. Granger.

PENNSYLVANIA

With thirty two mines in Cambria, Indiana and Clearfield counties and headquarters at Cresson, the **Pennsylvania Coal & Coke Corporation**, is operating on a 50 per cent basis. Its two largest operations at Beaverdale and Gallitzin are closed and the office force at Cresson has been reduced.

The **Stineman Coal Mining Co.**, with the largest operations in the South Fork region, Cambria County, is operating but about ten per cent of its normal basis. The Stineman mines employ 400 men and worked but five days during February.

The **Maryland Coal Co.**, a subsidiary of the **Berwind-White Co.**, with operations at St. Michael, employing about 600 men is operating on a 100 per cent basis.

At Vintondale, mining is going on as usual. The **Vinton Colliery Co.** is working approximately 700 men on a normal basis, losing only four days in five months.

In the Barnesboro district, the mines of the **Watkins Coal Co.** are closed. The **Barnes-Tucker Co.**, which operates seven mines with 1,000 men, is working about full capacity. The **Maderia-Hill Co.**, two mines and 250 men, is working half time, with good prospects for four days a week. The **Greenwich mines**, employing 250 men, are temporarily closed.

At Hastings, the **Oak Ridge Coal & Coke Co.** is operating its No. 6 mine to full capacity with 110 men while all other mines of this company have been closed since the first of March.

Among the plants, otherwise idle during this dull period, the following work is being done: The **Superior Connellsville Coke Co.** is driving some entries double shift to develop some recently acquired territory. The **Union Connellsville Coal & Coke Co.**, at Simpson, is employing about one hundred men repairing the damage done by the recent fire. The **Century Coke Co.** has extended its motor haulage nearer the working places. The **Snowden Coke Co.** is repairing ovens and coke machines and completing a machine shop started before the shut-down. The **H. C. Frick Coke Co.** is still operating most of its mines, some full time and some part time, and is doing some work on an extensive belt conveyor system to transport coal underground from several mines to the Monongahela River near Fayette City. The **Mather Coal Co.**, at Mather, in Greene County, is driving entries, three shifts a day, to develop the large mine opened over a year ago, taking advantage of the plentiful labor supply. The **American Coke Corp.** is stripping an eight-acre tract of coal at Linn between the Sunshine mine and Redstone Creek, where the Pittsburgh coal outcrops.

The **Welling Coal Co.**, which has been operating at Banning has leased on a 20-year basis a tract of exceptionally good coal land along the Youghiogheny River. The tract is located across the river from Suterville and is convenient to the West Penn power line. A modern operating plant, electrically equipped, will be installed.

Changes in the tentative draft of the Governor's proposed tax on anthracite coal has been agreed upon. It has been agreed that the bill will provide that a tax of 2 per cent on the mine market value of coal will be levied. The ton value will be arbitrarily fixed at \$5.

James H. Dunn and others of Uniontown have organized the **Union Gas Coal Co.**, a West Virginia corporation capitalized at \$100,000. Headquarters of the company will be at Uniontown.

Fire recently destroyed the tipple of the **Union Coal & Coke Co.** at Dunkirk. The loss is estimated at \$10,000.

In four separate verdicts taken against the **Peoples Coal Co.** damages amounting to \$14,500 were recently awarded, the cases all resulting from alleged reckless mining which damaged many properties by settling of the earth.

Properties in Green County, Pa. purchased several months ago by the **Rosedale Coal Co.**, from **J. Frank Dawson** and **Taylor N. Dawson**, aggregating about 1,000 acres, have been formally transferred to the purchasing company. The consideration involved in this deal was about \$525,000.

Conditions in the Continental mine, West Scranton, which is owned by the **D. L. & W. R. B. Co.**, where a fire has been raging for several years is under investigation by a special commission of six mine inspectors.

The **Hillman Gas Coal Co.** has commenced shipments from its Gibson mine in Washington County, near Bentleyville. Shipments at the present time are but two or three cars daily but it is planned to increase the tonnage steadily.

TEXAS

Fire caused by a defective flue destroyed the commissary of the **International Coal Co.** at Rockdale. Loss is estimated at \$3,000, partly covered by insurance. The commissary is being rebuilt.

The **American Fuel Corporation**, a Texas company with a capital stock of \$2,000,000, has been organized with headquarters at Dallas, and is now preparing to begin extensive development work in the lignite beds near Donie, in Freestone County. E. B. Neiswanger, chief engineer of the **Texas Power & Light Co.** of Dallas, is president and will also be active manager. Other officers of the company are: Clarence E. Linz, vice president; Harry L. Seay, vice president; J. S. Pulliam, vice president; Charles L. Sanger, director; S. J. Jacobs, treasurer; E. W. Blumenthal, secretary. All officers reside in Dallas. The holdings comprise 1,859 acres adjacent to three railroads, and conservative estimates place the fuel deposit at more than 50,000,000 tons.

UTAH

The capital stock of the **Mutual Coal Co.** of Salt Lake City has been increased from \$250,000 to \$500,000. The number of shares is increased from 25,000 to 50,000, the shares being \$10 each.

The **Crescent Coal Co.** has filed articles of incorporation. The president is L. F. Rains, well known in Salt Lake City coal mining circles; A. H. Jenkinson is vice-president, and secretary-treasurer. Others on the directorate are F. N. Jenkinson, V. B. DeMeyer and J. F. Rains, all of Salt Lake City. The capital stock is \$500,000.

VIRGINIA

The **Bundy Coal Co.** has been organized at Big Stone Gap to develop 75 acres of coal land near Johnson's Mills. A. N. Gilly is president of the company.

A New York Broker is offering at par and interest \$1,000,000 ten-year 8 per cent, sinking fund gold debentures of the **Clinchfield Coal Corporation**, due April 1, 1931. The corporation owns about 300,000 acres of coal lands with an annual output in excess of 2,000,000 tons. The issue is to retire the indebtedness incurred in the development of the property and to furnish additional working capital.

WEST VIRGINIA

Olcott in Kanawha County is to be the seat of operations of the newly organized **Kanawha Black Band Coal Co.** with headquarters in Charleston. Development work will be undertaken on quite an extensive scale, it is understood, following the organization of this company with a capital stock of \$150,000. Active in effecting the preliminary organization were: Frank K. Weaver of Johnstown, Pa.; T. Brooke Price, Duke W. Hill, John J. D. Preston and Pauline Tanner of Charleston.

Northern West Virginia people are principally interested in the **Kanawha Standard Coal Co.**, with headquarters in Clarksburg. This company has a capitalization of \$100,000. Although headquarters are to be in Clarksburg, the mines to be opened are in Clay County on the Charleston division of the B. & O.

The **Lake & Export Corporation** of Huntington is making preparations to expand its organization and with that in view will open branch offices at certain market centers in this country and in Paris, France, with a view to securing foreign trade if possible. Announcement to the above effect was made by President S. J. Payne of the corporation.

The visit of officials of the **Consolidation Coal Co.** at the headquarters of the **New River Co.** operating very extensively in the New River field has given rise to the suggestion that the first named company may be negotiating for the purchase of the properties of the **New River Co.** although there has been no intimation that there has been any deal initiated for a change in ownership.

Material revision of the gross sales tax bill as introduced in the West Virginia legislature is proposed to meet the objections which have so far arisen to the measure. The bill in its original form simply provided for the imposition of a sales tax of one-half of one per cent on the sales of all property of whatever nature. The proposed amendment would provide for a production sales tax, for a sales tax and for an excise tax. The production sales tax would require that a tax of one-half of one per cent be paid for the privilege of engaging in mining coal, oil, gas or any other mineral for sale. The change proposed virtually amounts to a production tax but is so worded as to bring it within constitutional limitations and to make it conform to a decision of the United States Supreme Court which does not permit a production tax on products moving in interstate commerce.

The report of the **New River Co.** shows that operations were very successful during 1920. Profits for the year reached \$4,083,187.69. Deferred dividends paid during 1920 aggregated 18 per cent. The annual meeting of the company will be held at Mt. Hope on April 13 to elect directors.

The recently organized **Parkersburg Coal, Dry Docks & Transportation Co.**, with a capital of \$250,000 is a subsidiary of the **Ben Franklin Coal Co.** of Moundsville. The newly organized company has acquired all the holdings of the **Winters Coal Co.** The **Parkersburg** company is said to have secured contracts to supply many of the larger industries of Parkersburg.

BRITISH COLUMBIA

Under the management of Messrs. Johnson and McLean the **Coalmont Collieries** has developed the areas on their property, about 2.82 miles southwest of the town of Coalmont, on the Kettle Valley Ry. A new opening has been made in the mine and different seams blocked out. A new bunkhouse and dwelling houses have been built and an aerial tram 15,000 feet long, with a capacity of 60 tons an hour, installed; also a tipple and screens at the railway and a plant to generate electric power for the mine and town.

The **East Wellington Coal Co.** is a new organization that has secured a lease on a royalty basis from the Canadian Collieries (Dunsmuir), Limited, of a tract of approximately 2,800 acres of land adjoining the old Jingle Pot mine and extending to the northward. This tract of land is for the most part virgin territory, presumably underlain by the Wellington coal-seam, but also includes the old East Wellington mine, which it is proposed to unwater. Up to the present time the work being done consists of clearing 10 acres for mine buildings, driving a new slope 611 feet, counter-slope 86 feet, crosscuts 155 feet, sump 6 x 12 x 30 feet, and erecting buildings for machinery.

Traffic News

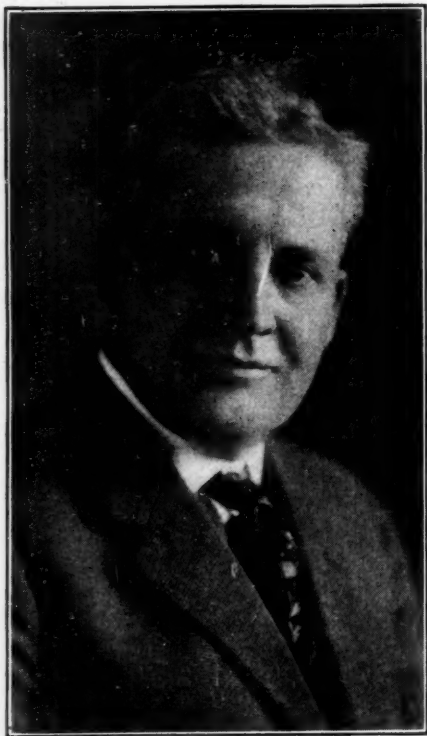
The I. C. C. has assigned for hearing at Chicago, April 14, the complaint of the **Sargeant Coal Co.**, involving rates on bituminous coal from mines in the Booneville district to points in Illinois, Wisconsin, Iowa and Minnesota.

At Indianapolis April 4 the commission considered the **Indiana State rate case** involving coal rates. Testimony was taken relative to rates on coal applicable intrastate in Indiana for distances of less than 30 miles, including their relation to rates applicable intrastate in Indiana for distances of 30 miles and more, and in their relation to rates applicable on interstate traffic.

In the case involving rates to, from and between points south of the **Ohio River**, including the Mississippi Valley, the commission has assigned for hearing April 11 at Memphis the rates on coke.

Personals

E. H. Weitzel the newly appointed general manager of the Colorado Fuel & Iron Co., was promoted after 13 years' service as manager of the fuel department to succeed the late J. B. McKennan. **D. A. Stout** was promoted from the position of assistant manager to manager of the fuel department. Mr. Weitzel received his first coal mining experience in the Pittsburgh district, thence going to Ohio. He later moved to New Mexico and continued in various capacities until appointed chief engineer of the fuel department of the C. F. & I. Co. in 1907.



E. H. WEITZEL

General Manager Colorado Fuel & Iron Co.

Henry M. Schmidt, of Pittsburgh, has resigned as superintendent and engineer of the Ft. Pitt Coal Co., and accepted the position of chief engineer for the Arrow Coal Mining Co., of Pittsburgh, operating in Cambria County.

Colonel T. E. Houston, president of the Houston Coal & Coke Co. and of numerous other companies operating in Norfolk & Western territory returned to the United States from a trip abroad. Colonel Houston having sailed early in January.

C. E. Hutchinson, vice-president of the Hutchinson Coal Co. of Fairmont is back at his desk again in Fairmont after an extended trip to Cuba and Costa Rica where he is interested in a large mining concession.

The Bureau of Mines has appointed **E. W. Zimmerman** of Decatur, Ill., as consulting economist on lignite.

Isaac T. Mann, of Bramwell, president of the Pocahontas Fuel Co., of the Pulaskie Iron Co. and many other concerns in southern West Virginia is being favorably mentioned for the post of ambassador to Spain or some other foreign post and has been given the unanimous endorsement of the West Virginia senatorial and congressional delegation. Mr. Mann is considered eminently well fitted by training and temperament to fill a diplomatic post most acceptably.

R. S. Rockwell, superintendent of the New River Division of the C. & O. and **J. W. Davin**, chairman of the Car Allotment Commission of the same railroad spent several days in March in the Winding Gulf region and in the Stone Coal section of the New River field.

Association Activities

Tug River Operators' Association

The newly established offices of the Tug River Operators' Association will be completely organized and ready for business by the first of April according to an announcement recently made by C. C. Morfit recently elected secretary of the Association.

Indiana Bituminous Operators' Association

At the annual meeting, March 16, of the Indiana Bituminous Operators' Association the reports for the year were heard. Officers were re-elected as follows: **M. L. Gould**, Indianapolis, president; **E. D. Logsdon**, Indianapolis, vice-president, and **P. H. Penna**, Terre Haute, secretary-treasurer. The board of directors will continue to serve for three months.

Northern West Virginia Coal Operators' Association

George S. Brackett, secretary of the Northern West Virginia Coal Operators' Association, has returned from New York, where on March 16 he attended a conference between traffic managers of various coal associations whose territory has been and is being affected by freight differentials, and vice-presidents in charge of traffic of the following railroad companies: Pennsylvania, Baltimore & Ohio, P. & L. E., Hocking Valley, Chesapeake & Ohio, Norfolk & Western and the New York Central. The coal people presented their case and late the same day received the information that their request for a readjustment of rates had been denied and that there would be no adjustment of rates to the Lakes. If that decision is permitted to stand, it is stated by representatives of the association that it will virtually eliminate northern West Virginia producers from Lake markets unless they are willing to sell their coal at a loss as the differential is such that they cannot hope to compete with Ohio and other Western producers. Of course, West Virginia producers are reluctant to abandon a market which they have assiduously cultivated and in which they have built up a good business.

Upper Potomac Operators' Association

The association has appointed a committee to act with a similar committee of the Northern West Virginia Operators' Association for the enactment of a gross sales tax by the West Virginia legislature or for the enactment of legislation along somewhat similar lines.

Obituary

Death has claimed **James Calhoun Crawford**, of Fairmont, aged 69, long actively identified with affairs in Fairmont and during a long period of time identified with the Consolidation Coal Co.

William F. Turner, for the past four years a member of the Illinois State Miners' Examining Board, died recently at his home in Danville, Ill.

James W. Wiley, Sr., one of the pioneer coal and coke operators of the Connellsville region, died recently at his home in Scottsdale. Mr. Wiley was one of the first men to appreciate the possibilities of the West Virginia coal field.

Recent Patents

Interlock and Signal Device for Coke-Oven Door Operating and Pusher Machines. C. T. Keigley, Lorain, Ohio, 1,368,163. Feb. 8, 1921. Filed Dec. 3, 1919. Serial No. 242,300.

Coal Digger. John Newark, Coral, Pa., 1,368,189. Feb. 8, 1921. Filed June 26, 1918. Serial No. 242,035.

Coal-Handling Device. William Robertson, Chicago, Ill., 1,368,456. Feb. 15, 1921. Filed May 10, 1919. Serial No. 296,061.

Cutter-Chain Mining Machine. M. S. Smith, Glasgow, Scotland, 1,368,521. Feb. 15, 1921. Filed Jan. 20, 1920. Serial No. 352,889.

Grease Cup. P. F. Wollenweber, Toledo, Ohio, 1,368,675. Feb. 15, 1921. Filed May 10, 1920. Serial No. 380,053.

Concentrating Table. J. F. McNeil, Clifton, Ariz., 1,368,815. Feb. 15, 1921. Filed July 23, 1919. Serial No. 312,770.

Fastener for Sectional Coal Auger. Clyde C. Hartzell, Pittsburgh, Pa., 1,368,928. Feb. 15, 1921. Filed Nov. 3, 1919. Serial No. 335,442.

Mining-Machine Truck. M. P. Holmes, Clarmont, N. H., 1,369,175. Feb. 22, 1921. Filed June 21, 1916. Serial No. 105,402.

Method of and Apparatus for Utilizing Mine Waste by Means of the Heat of Dump Heaps. Walter Oswald, Grossbothen, Saxony, Germany, 1,369,350. Feb. 22, 1921. Filed July 21, 1916. Serial No. 110,619.

Plumb-Bob. R. N. Easterberg and H. J. Volkwein, Pittsburgh, Pa., 1,369,523. Feb. 22, 1921. Filed Aug. 7, 1919. Serial No. 315,840.

Coming Meetings

Indiana Retail Coal Merchants Association will hold its convention at Indianapolis, Ind., May 4, 5 and 6. Secretary, R. R. Yeagley, Indianapolis, Ind.

American Society of Civil Engineers will meet at Houston, Texas, on April 27 to 30. Acting Secretary, H. S. Crocker, 33 West 39th St., New York City.

American Institute of Chemical Engineers will hold its spring meeting June 20 to 24 at Detroit, Mich. Secretary, Dr. J. C. Olsen, Polytechnic Institute, Brooklyn, N. Y.

The American Wholesale Coal Association will hold its annual convention in Washington, D. C., June 7 and 8. Secretary, G. H. Cushing, Woodward Bldg., Washington, D. C.

The International Railway Fuel Association will hold its thirteenth annual meeting at the Hotel Sherman, Chicago, Ill., May 24, 25 and 26. Secretary, J. G. Crawford, Chicago, Ill.

The National Coal Association will hold its next annual convention at the Waldorf Astoria Hotel, New York City, May 19 and 20. White Sulphur Springs hotel reservations have been cancelled. W. B. Reed, secretary, Commercial National Bank Bldg., Washington, D. C.

The American Society of Mechanical Engineers will hold its spring meeting May 23, 24, 25 and 26 at the Congress Hotel, Chicago, Ill. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

National Chamber of Commerce will hold its ninth annual meeting at Atlantic City, N. J., April 27, 28 and 29.

National Retail Coal Merchants Association Sixth Conference of Secretaries and Executives to be held at the Baltimore Hotel, Kansas City, Mo., May 15 and 16. For reservations address H. S. Mitchell, New York Life Bldg., Kansas City, Mo.

National Retail Coal Merchants Association will hold its annual meeting May 12, 13 and 14 at the Jefferson Hotel, Richmond, Va. Secretary, E. G. Gordon, Philadelphia, Pa.

The National Foreign Trade Council will hold its eighth annual convention May 4, 5, 6 and 7 at Cleveland, Ohio. Secretary, J. G. Hammond, 409 Park Bldg., Cleveland, Ohio.

Illinois Mining Institute will hold its spring outing the latter part of May on the Mississippi and Illinois Rivers, the boat leaving St. Louis for Peoria on May 26 and returning on May 28. Secretary, Martin Bolt, Springfield, Ill.